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No. 9

Chemical Facts at Grass Roots Level Seen as Effective

Plea Made to Counteract Congressional Hearings Via Women's Civic Groups

By JOHN CIPPERLY

WASHINGTON—Recent activities of Congressional committees, regular or special examining operations of government agencies and those of USDA and its branches, obviously are not to be challenged in principle by the public or industry. They are part of the Federal Government and contemplate a Congressional control over the use of appropriated funds by Congress. There should be no objection to watch-dog activities by Congress.

However these Congressional investigations wander widely—they have become a sort of exploratory activity wherein the respondent dare not take an aggressive defense lest he be sacrificed through devices available alone to the committee chairman or its majority. This condition can and has happened no matter which party has been holding the committee majority.

At this session of Congress, there are some vital controversial themes under consideration—such as the Food and Drug Administration control—the grain storage charges—mergers of industrial companies and many others.

It is unfortunate that people must be people—and when people become politicians—there is an added ingredient which goes beyond normal human behavior and ultimately develops into a horrible potpourri which affronts the tastes of all and sundry.

There is within the nation several groups of well-intentioned people such as the Parent-Teacher Assn. and the League of Women Voters and consumer groups generally who are susceptible to inflamed and violent

(Turn to GRASS ROOTS, page 30)

Kickapoo Fertilizers Acquires Interest In Koos & Sons

STEVENS POINT, WIS.—Kickapoo Fertilizers of Stevens Point has announced the purchase of controlling interest in N. S. Koos & Sons, Kenosha, Wis.

The stock purchase will make Kickapoo Fertilizers one of the Midwest's largest fertilizer producers, according to R. B. Baldridge, executive vice president and general manager of the company.

The Koos firm has operated for 50
(Turn to KICKAPOO, page 3)

Solar Nitrogen Plans \$2 Million Expansion Program During 1960

LIMA, OHIO—Solar Nitrogen Chemicals, Inc., has announced a \$2 million expansion program in its Lima, Ohio facilities. According to Edward F. Morrill, president, the facilities affected by the stepped-up program will include ammonia, urea,

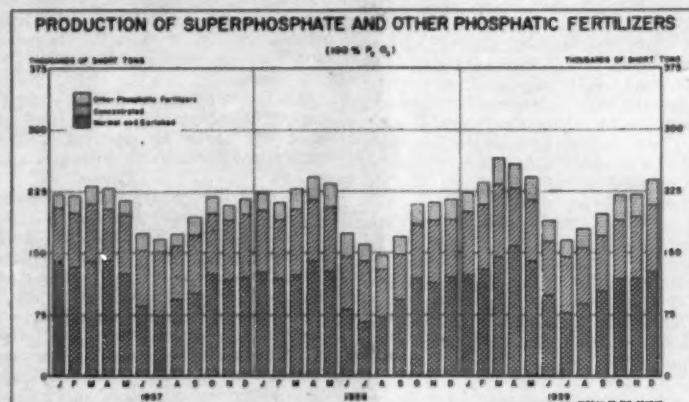
nitric acid and nitrate manufacturing units.

Mr. Morrill stated that this expansion, resulting in an annual increase in ammonia production of approximately twenty-five thousand tons, is moving ahead rapidly and completion is anticipated during 1960. The president said that the firm's production facilities are being expanded to serve better the rapidly growing needs for ammonia, urea, and nitrogen solutions in the Midwest.

The company's products are sold by the Sohio Chemical Co., manufacturing and sales agent for Solar Nitrogen Chemicals, Inc., to more than twelve major industries, among which the fertilizer and chemical industries rank highest.

The company's nitrogen chemicals are sold as far west as the Dakotas; north into Canada; south to Tennessee and Kentucky; and as far east as Maine.

Solar Nitrogen Chemicals, Inc., is jointly owned by the Atlas Powder Co. of Wilmington, Del. and the Standard Oil Co. (Ohio).



U.S. Superphosphate Production Shows Monthly Rise During December, 1959

WASHINGTON—U.S. production of superphosphate and other phosphatic fertilizers during December, 1959, amounted to 238,117 short tons (100% P₂O₅) compared with 215,867 short tons for the same month in 1958, reported the Bureau of the Census, U.S. Department of Commerce.

Shipments of superphosphate and

other phosphatic fertilizers during the month totaled 144,816 short tons, an increase of 3% from the volume shipped during the corresponding month the previous year.

Stocks held by the producing plants as of Dec. 31, 1959, totaled 363,718 short tons, or 10% more than those held on Nov. 30, 1959.

New Spanish Fertilizer Plant Starts Production

PUERTOLLANO, SPAIN—A state-owned chemical fertilizer facility has begun production here, according to the Canadian Department of Trade and Commerce.

The plant produces ammonia and calcium, plus ammonium sulfate. Annual output has been estimated at 80,000 tons.

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Nation's Well-Being Dependent On Pest Control, Speaker Says

AUBURN, ALA. — Controlling plant, animal, and household pests is necessary for the well-being of the entire nation!

This statement, made by Dr. G. L. Haeussler, assistant director of the Entomology Research Division, USDA Agricultural Research Service, set the theme for the Feb. 17 and 18 Alabama Pest Control Conference, attended by some 200 at Auburn University.

The USDA official said these important pests must be controlled if Americans are to continue to enjoy the accustomed abundance of high quality food, other agricultural products, and even normal comfort and health. Losses from insects, weeds, plant diseases, and rodents run well

over \$12 billion annually, he said, and many crops could not be produced economically without using effective control measures.

A number of methods and materials for controlling pests has been provided by science, Dr. Haeussler told the conference. At present, chemicals provide the most effective, most readily available, and quickest means of preventing and reducing damage by most pests of economic importance to American agriculture. Insecticides, fumigants, fungicides, herbicides, rodenticides, and nematocides were named as the foundation for defense against pests. Pesticide use has expanded extensively in recent years because farmers realize that proper

(Turn to ALABAMA, page 19)

Joseph A. Howell, Former NPF President, Dies

WASHINGTON—Joseph A. Howell of Richmond, Va., first president of the National Plant Food Institute, died unexpectedly Feb. 16, while on a business trip in Washington, D.C.

Funeral services for Mr. Howell were held Feb. 19 at St. Stephens Episcopal Church, Richmond.

For several years, Mr. Howell has been a consultant in the agricultural chemicals field, following his career as president of the Virginia-Carolina Chemical Corp., where he served for a period of 34 years in progressively responsible positions.

He was a leader in the consolidation of the American Plant Food Council and the National Fertilizer Assn., which became the National Plant Food Institute in 1955, at which time he was elected to the presidency of the Institute.

A widely-known industry leader and executive, Mr. Howell was born in 1901 in Troy, Ala. He attended George Washington University, the University of Alabama, and was an aide to U.S. Congressman Henry B. Steagall, 1919-1921.

He became a bookkeeper for the Virginia-Carolina Chemical Corp. in 1922, progressing to assistant manager of the corporation's Shreveport, La. plant, 1925-31; manager of the Jackson-Memphis-Shreveport territory, 1931-36; southern sales manager, Richmond office, 1936-37; general sales manager, 1937-38; vice president in charge of sales, 1938-44;

(Turn to HOWELL, page 17)

Economic Value of Fertilizers and Weed Control Chemicals Stressed at Conference

PORTLAND, ORE.—The value of commercial fertilizers and modern herbicides to better range management were explained by some of the speakers during the 13th annual American Society of Range Management meeting at Portland, Feb. 2-5.

Nearly 500 conservationists, livestock producers, foresters, range administrators and other interested persons heard such subjects discussed as "Problems in the Aerial Application of Herbicides to High Elevation Areas," and "Some Aspects of Using Woodchips and Nitrogen Fertilization in Establishing Grasses on 'Scab Ridges' in Eastern Oregon."

William K. Cooperrider and W. A. Work of the U.S. Forest Service-Intermountain region explained that the region has been using chemicals as range improvement tools since 1948, and now 85,000 acres have been treated mostly by airplane.

Mr. Cooperrider and Mr. Work explained that most aerial application problems are either those affecting the safety of the operation or those affecting the efficiency of the program.

These specialists told the meeting that a study made to determine the maximum height from which herbicides could be effectively applied, presented the following results:

(1) Adequate kills can be obtained from elevations up to 200 feet if satisfactory conditions of temperature, humidity and wind exist; (2) the weather factors appear to be more critical than height of application; and (3) additional research is needed to pinpoint these weather limitations and to develop standards in herbicide carriers, chemical formulations, drop-size, etc.

"Studies were continued during 1959 to find chemicals and techniques which would minimize the effects of adverse conditions and control problems encountered in large scale projects," the forest service pair reported. "These studies included work with invert emulsions, comparison between low and high volatile esters, and comparison between different solution volumes using the same amount of toxicant."

Complete results of this work, carried out on an 8,890 acre Bridger National Forest in Wyoming, are not available, but the following facts are evident, according to Mr. Cooperrider and Mr. Work.

(1) It is now possible to apply invert emulsion with fixed wing aircraft.

(2) The inverts appear to form more uniform and heavier droplets which reduce the effect of wind and high temperatures.

(3) Buffer areas should be established between desirable browse and timber types and the spray areas.

(4) Low volatile type spray should be used around the perimeter of the project area next to the buffer strips.

(5) Additional markings of the spray area boundary are needed.

(6) High volatile spray should not be applied with any wind in areas where drift may cause damage to desirable vegetation.

Gerald J. Klomp, USDA range conservationist for the crops research division, LaGrande, Ore., told how the problem of reseeding eastern Oregon and eastern Washington "scab ridges" is being solved by applying woodchips with nitrogen.

"A study on a typical scab ridge site was initiated by the forest service in 1952 to observe the effects of applying woodchips with and without nitrogen fertilizer in a reseeding trial. Woodchips were applied to cover the plots at both 1 and 1/2-inch depths and nitrogen was added (in split applications) at the rate of 300 lb. nitrogen an acre per inch of chips," explained Mr. Klomp. "Plots were seeded at the rate of 12 lb. an acre with a mixture consisting of

pubescent wheatgrass (6 lb.), hard fescue (4 lb.), and timothy (2 lb.)."

The site was plowed in the summer, he reported. In the fall, treatments were applied and the seeding was done. On some plots the woodchips were scattered and left on the soil surface; in others they were incorporated into the soil by disking, the meeting was told.

In some instances, the seed was broadcast before the chips were applied; in others, it was broadcast after the chips were applied. In all instances where chips were disked, seed was broadcast after disking.

In some plots, the seed was drilled instead of broadcast, either before or after chips were applied. The last of the split applications of nitrogen was applied in 1954, the year the study was transferred to Agricultural Research Service.

Mr. Klomp said that early observations of these plots indicated good stands of grass, with all species doing well.

The treatments involving the greatest amounts of woodchips with nitrogen produced the best stands. On a relative rating system based on 5-6 medium, 7-8 good, and 9-10 very good, the stands resulting from the various treatments were rated in 1957 as follows:

One-inch chips, disked, with nitrogen, 9.5; one-inch chips, with nitrogen, 9.0; one-half inch chips with nitrogen, 9.0; one-inch chips without nitrogen, 7.0; check (no chips, no nitrogen), 6.5; one-half inch chips, disked, with nitrogen, 6.0; one-half inch chips, without nitrogen, 5.0.

Two other agricultural chemical talks concerned "Comparisons of Chemical Brush-Killers on Vegetation of Sand-Hills Range," by William G. Corns, professor of crop ecology, University of Alberta, Edmonton, Canada, and "Factors Influencing the Availability of Nitrogen in California Grassland Soils," by James O. Kelmedson, Intermountain forest and range experiment station.

Richard E. Eckert, Jr., A. T. Bleak, and Jos. H. Robertson, range conservationists, Crops Research Division, Agricultural Research Service, USDA, Reno, Nev., Ephraim, Utah and University of Nevada, Reno, explained the effect of macro- and micro-nutrients on the herbage yield of crested wheatgrass.

These specialists told of studies evaluating the use of nitrogen, phosphorus and sulfur for increased forage production on a reseeded range at Sweetwater Flat, and Paradise Valley, Nev.

BEAUTIFUL MUSIC

ST. LOUIS—The first industry-sponsored symphony concert in the history of St. Louis, featuring Van Cliburn, world famous American pianist, and the St. Louis Symphony Orchestra, was attended by 8,500 persons Feb. 19.

The unusual concert was exclusively for Monsanto Chemical Co. employees in the area, their families and their friends. Tickets were \$1 each.

Interest among Monsanto personnel earlier caused the event to be moved to the 10,000-seat Convention Hall of Kiel Auditorium from the 3,800-seat St. Louis Theater, where originally it had been scheduled.

The idea for the concert originated with Dr. Charles Allen Thomas, president of Monsanto, and Orrin S. Wightman, president of the St. Louis Symphony Society. Mr. Wightman said the concert could not have been the overwhelming success it was without the cooperation of Edouard Van Remoortel, conductor and musical director of the St. Louis Symphony Orchestra, and Van Cliburn.

IMPROVEMENTS NEEDED

WASHINGTON—Improved equipment and methods for applying pesticides to farm crops are needed in some areas, the U.S. Department of Agriculture's Farm Equipment and Structures Research Advisory Committee indicated at its annual meeting, Feb. 9-12. The meeting was held this year at Stoneville, Miss.

There is evidence that failure of some commonly-recommended pesticides to give satisfactory control may be due to a lack of accurate knowledge of the best methods of application, according to the committee, and strengthened research is needed to develop new information.

Fertilizer Application With Sprinkler System Lauded at Conference

SPOKANE, WASH.—Two speakers rendered advice on the use of fertilizers in conjunction with sprinkler irrigation systems at the Sprinkler Irrigation School sponsored by the Inland Empire Electrical League here Feb. 19.

C. B. Hartson, Washington State University extension soils specialist, spoke on fertilizer requirements with sprinkler systems; and Carl O. Olson, manager of Dickerson Machinery Co., Spokane, spoke on fertilizer application with sprinklers. The school was attended by more than 120 farmers from Eastern Washington and Northern Idaho.

Mr. Olson emphasized that sprinkler irrigation systems can be used to apply practically all types of soluble fertilizers—particularly nitrogen and potash.

He said the practice is relatively new in this region but requires little extra equipment or time. He said farmers can sprinkle and apply fertilizers at the same time at less cost than making separate applications.

Gale Gurtle, Spokane county agent, and Clarence Hurd, chairman of the farm committee of the league, an organization of both public and private power companies in the Inland Empire, presided at the all-day school.

Robert R. Martin Named To Virginia-Carolina Post

RICHMOND, VA.—Virginia-Carolina Chemical Corp. has announced the appointment of Robert R. Martin



Robert R. Martin

as manager of its purchasing department. He succeeds Douglas W. Laird who was department manager until last March when he was named vice president. Mr. Laird is now in charge of purchasing and traffic.

Mr. Martin will be responsible for the administrative functions of the department but will retain his duties in purchasing supplies and equipment. He joined V-C in 1951 as a buyer and was named assistant manager of the department in 1957. He is a native of Richmond, Va., and a graduate of the University of Richmond.

Soil Testing Seminar Planned in Minnesota

ST. PAUL, MINN.—The University of Minnesota Soils Department, in cooperation with the Minnesota Fertilizer Industry Assn., will present a seminar on soil testing at the Soils Building, St. Paul Campus on March 16.

Included in the program will be discussions on the whys and wherefores of soil testing, interpretation and correlation of soil testing and a demonstration in the soil testing laboratory.

Hercules Transfer

WILMINGTON, DEL.—Mancefield Barrow, a senior technical sales service representative in Hercules Powder Co.'s naval stores department, has been transferred to the department's Raleigh, N.C. office. In his new duties he will be concerned chiefly with the agricultural program of the department in the Raleigh district. He is a graduate agronomist and entomologist, and has had considerable experience in the use of toxaphene in cotton insect control programs and with other pesticides being developed by the company.



WINNERS ANNOUNCED—Winners of American Cyanamid Company's "Haymaker Contest" for fertilizer dealers in the Northeast were recently announced. More than five hundred dealers participated in the contest which was built around Cyanamid's eight-page detachable insert titled "How to Harvest the Hidden Milk on Your Farm," appearing in the January issue of "Farm Journal." Contestants were asked to figure the number of extra days a cow can be carried on an acre of urea fertilized grass. The dealer winning first prize with the correct answer of 201 days was Kermit O. Pike, manager of the Martin Elevator Co. of Martin, Mich. Making the presentation of a new shotgun is Fred W. Overton, center, American Cyanamid Company's district manager, and Joseph W. Dearen, right, sales representative. Fertilizer dealers who participated in the contest had the opportunity to compete for fifty-two prizes totaling \$875 in value.

Socializing at the Midwest Agronomists' Joint Meeting



PHOTOGRAPHED at the 12th annual joint meeting of Midwest Agronomists and Fertilizer Industry held recently at the Edgewater Beach Hotel in Chicago were: **TOP ROW** (1 to 5) H. Vise Miller, Armour Fertilizer Division; Tracy Adcock, Swift & Co.; Cash Cahill, F. S. Royster Guano Co.; Dr. W. P. Martin, University of Minnesota; Dr. Russell Coleman, the Sulphur Institute; Werner Nelson, American Potash Institute; Frank Nelson, Rath Packing Co., and Zenas Beers, National Plant Food Institute. **MIDDLE ROW**—Raoul Allstetter, NPFI; Dr. George Scarseth, American Farm Research Assn.; James L. Engfer, Croplife; Dr. R. P. Thomas, International Minerals & Chemical Corp.; Paul Marshall, Commercial Solvents Corp.; R. E. Bennett, Farm Fertilizer Co.; W. M. Newman and J. D. Stewart, Jr., Federal Chemical Co. **BOTTOM ROW**—Paul E. Nelson, Aubrey, Finley, Marley & Hodgson; Louis Wilson, NPFI; Bill Mason, radio station WLS, Chicago; Kirk Wagenseller, Swift & Co.; Robert Fitzgerald, Smith-Douglass Co.; H. C. Hopewell, Swift & Co., and Ed R. Schumann, John Guttay, Zenas Beers and Alan Woltemath, NPFI. **AT LEFT** is Paul T. Truitt, new president of NPFI. **AT RIGHT** is A. H. Bowers and J. F. Davis, Michigan State University. Photos on this page were taken by Mrs. Zenas Beers.

Mississippi Forms New Fertility Council

JACKSON, MISS.—A new agricultural organization, growing out of the Mississippi Fertilizer and Agricultural Workers Conference has been formed. To be known as the Mississippi Soil Fertility and Plant Food Council the group will be composed of members who are either directly

or indirectly interested in fertilizer and soil fertility.

H. S. Gordon, Jr., of Jackson was elected as the group's first president, and Mike Blouin, Jr., of Columbus was named vice president. W. L. Ashley of Jackson is secretary-treasurer. The already active advisory committee of the annual conference of which St. Corley, commissioner of agriculture, is chairman, will serve as the board of directors. In addition

to those already named, this committee is composed of J. T. Caldwell, Jr., and Charlie McNeill of Jackson, M. G. Field of Hattiesburg, H. W. Latimer of Philadelphia, and J. E. Young of Tupelo.

Committees are currently outlining objectives, making plans and setting the machinery in motion for developing an organization that will render a real service to Mississippi agriculture and the plant food indus-

try. Details of this year's meeting scheduled for August, will be announced later.

PLANT NEARS COMPLETION

AUMSVILLE, OREGON—A Swift & Co. bulk fertilizer plant under construction here is expected to be completed in about one month. The \$35,000 building, 50x100 ft., will dispense fertilizer from bins.

Fertilizers and Pest Control Products Listed as Makers of Profits at Texas Conference

LUBBOCK, TEXAS—Diversified use of chemicals in farming and ranching was stressed at the seventh annual Agricultural Chemicals Conference held Feb. 10-11 on the Texas Tech campus here.

Cotton diseases, herbicides and nitrate fertilizers held the spotlight of interest for more than 230 distributors, dealers and chemical representatives from eight states attending the two-day conference sponsored by Tech, the West Texas and Lubbock Chambers of Commerce, and the Texas agricultural extension service.

Emphasis this year was on farm chemicals and quality production, said Dr. Gerald W. Thomas, Texas Tech agriculture dean, who also indicated that more than 100 chemicals are used in cotton and grain sorghum production in this area alone.

Problems of aerial applicators were outlined by William A. Lewis, president of the Texas Aerial Applicators Assn., and L. P. Nolen, vice president of the National Aviation Trades Assn.

Mr. Lewis called for the chemical industry to consider flight applicators more when compounding and packaging their product while Mr. Nolen described aeronautical research that will make the airplane do more farm jobs efficiently.

Speaking on use of chemicals in meat production, Dr. Ralph Durham, Tech animal husbandry department head, described the important relationship between the cost of chemical additives and the product being produced.

"The general pattern of all of the additives is to increase feed consumption and speed up weight accumulation," he stated. "We did not say 'increased efficiency and rate of gain' for generally, the improved increment of efficiency is far below that of the improved rate of weight accumulation."

Chemicals can only be used profitably if they return a profit increment over cost, he emphasized. What "we need are more efficiency stimulants and less growth stimulants."

"Growth regulators are not magic compounds, but are only vital links

in a complicated biological system," Dr. Wayne Hall of Texas A&M told the conference. "The whole spectrum of stimulants and suppressants is now in its scientific infancy. We must continue to think of the over-all biological response to plant regulators and not in terms of the regulator alone."

A comparison of chemicals used in balancing grain sorghum rations for poultry was given by Dr. E. L. Stephenson of the University of Arkansas.

Dr. L. S. Bird, Texas Agricultural Experiment Station plant pathologist, told the dealers that control of cotton diseases must be planned in advance—even two or three years before a field is planted—if control is to be really effective. "A control program must be diligently followed and continued from year to year if farm chemicals are to help increase quality production," he said.

"Herbicides have become an essential tool in American agriculture," R. H. Beatty of Amchem Products Inc., declared. "It is ironic that because of misuse by a very few farmers an entire crop or segment of our agriculture stands to lose important chemicals through fear of hysterical publicity."

"Herbicide labels must be approved by government agencies before a product is sold. Dealers must insist that the user follow directions on these government-approved labels. And, we must also insist that there will be responsible government officials who will support farmers using chemicals properly and penalize only the careless users," he said.

Soil tests for nitrate are necessary in the South if nitrogen is to be applied accurately, W. B. Andrews of Mississippi Chemical Corp. said. General recommendations were once useful, but the needs of intensive farming today require that nitrogen needs be related to the crop producing capacity of the land.

Dr. Tom C. Longnecker, director of the High Plains Research Foundation near Plainview, Texas, predicted "a



SCIENTISTS, DEALERS COMPARE NOTES—Talking over the program at the seventh annual Agricultural Chemical Conference in Lubbock, Texas, are (left to right): Harry Morkel, Floydada, Texas, farm chemicals dealer; Dr. E. L. Stephenson, University of Arkansas; Dr. R. L. Beacher, National Plant Food Institute, Fayetteville, Ark., and W. H. Jones, Lubbock district agent for the Texas A&M extension system.

In lower photo are: C. F. Fisher, Texas Agricultural Experiment Service; Dr. L. S. Bird, Texas Agricultural Experiment Station plant pathologist from College Station; F. D. Cook, Texas Agricultural Experiment Station agronomist from Temple, Texas, and Dr. R. C. Goodwin, acting president of Texas Tech and professor of chemistry. More than 180 dealers, distributors and chemical representatives registered for the conference.

whole batch" of new grain sorghum hybrids will replace in a few years those used in this area.

"We've come a long way in the past six or eight years with better hybrids, better use of irrigation water and more information on amounts of fertilizers to use."

"Where 6,000 lb. an acre yield of grain sorghum was once considered unusual on irrigated land, 8,000 pounds per acre was the yield in Hale County, Texas, and fertilizer tests at the Foundation produced 7,500 lb. to the acre," he noted.

NAMED WITCO DIRECTOR

NEW YORK—J. Porter Brinton, Jr., has been elected a director of Witco Chemical Co., Inc., according to an announcement by Robert I. Wishnick, chairman of the board. Mr. Brinton continues as chairman of the boards of two recently acquired, independently operated Witco subsidiaries: Tar Distilling Co., Inc., and Old Colony Tar Co., Inc., both of which he founded in the early 1930's. Full ownership was transferred to Witco in January, 1960, in exchange for stock. In addition, Mr. Brinton is currently president of Hydrocarbon Products Co., a director of Westmoreland Coal Co., vice president and a director of Independent Coal Tar Co., trustee and assistant treasurer of Grand Central Art Galleries, a director of Putnam Trust Co. of Greenwich, Conn., and a corporate member of Greenwich Hospital.



Maywood W. Chesson George L. Lyle

APPOINTMENTS—American Cyanamid Co., New York, announced the appointments of Maywood W. Chesson, Jr., to assistant manager of phosphate operations and George L. Lyle, Jr., to chief engineer at the firm's Brewster, Fla. plant. Mr. Chesson has been assistant to the manager of phosphate operations since February, 1959. He started with Cyanamid in 1947. Mr. Lyle, who succeeds W. J. Pace who retired, has also been with the company since 1947. He was formerly assistant chief engineer.

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Cy Emery Re-elected to Third Term As Mississippi Aerial Applicators' Head

BILOXI, MISS.—Cy Emery, Laurel, Miss., was reelected to his third term as president of the Mississippi Aerial Applicators at the recent annual conference of the group at the Buena Vista Hotel in Biloxi.

The conference also named Mabrey Anderson, Clarksdale, vice president; and reelected Jack Shannon, Clarksdale, to his second term as secretary-treasurer.

Named as directors were Ed Osborne, Tunica; Johnny Easter, Hollandale, and Edgar Hobbs, Moorhead, along with Ben Willis, Moorhead, from the pilots' group.

Mabrey Anderson, chairman of the legislative committee, reported steps are being taken to introduce a bill to reduce sales tax on agricultural planes and plane equipment from 3% to 2%, as it is now on automobiles. He reported a general aviation bill has already been introduced to the legislature which would provide for licensing aerial applicators and bring them under the regulation of the Mississippi Aeronautics Commission.

Dr. Marvin Merkle of Leland, in charge of research on cotton insect control for the USDA in Mississippi, told the group crop dusting is no longer a "fly by night" operation, but has assumed the aspects of a full fledged responsible business. Today's aerial applicators must know much more than how to fly a plane, he said. It is necessary to have a technical knowledge of the chemicals used and to know how and when to apply them.

Dr. Merkle suggested to the applicators that they study and apply three "R's" to their business. These are: the resistance of insects to insecticides, the residues left in plant life by certain chemicals and the relation of the industry to the public.

K. P. Ewing, Washington, D.C., entomologist consultant, told the con-

ference they should widen their scope of services beyond just cotton insect control and defoliants. He said aerial application of fertilizers and herbicides would increase their business measurably.

He added that applicators are not benefiting as much as they could from the early season spraying of cotton crops, pointing out that business in Mississippi could be increased by about 40% by stressing the importance of early application.

Mr. Ewing said today's cotton farmer must produce a big per acre yield if he is to stay in business and he must produce quality cotton economically. To do this he must control insects through the use of insecticides. Aerial applicators should play a more prominent part in the control of insects, he declared.



MISSISSIPPI OFFICERS—New officers and directors elected by the Mississippi Aerial Applicators Assn. at the group's recent annual convention at Biloxi, Miss. are pictured above, left to right: Johnny Easter, Hollandale, director; Ed Osborne, Tunica, director; Jack Shannon, reelected secretary-treasurer; Cy Emery, Laurel, reelected president for the third time; Mabrey Anderson, Clarksdale, vice president; Dave Harris, director; Edgar Hobbs,

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BIG DEMAND Recent improvements in application equipment make it easier for the average farmer to apply Heptachlor. More and more farmers are using Heptachlor, because it gives them better results at no extra cost. This is the year that all the groundwork will pay off! Greater acceptance, easier application, and doubled advertising and sales promotion mean a big demand for Heptachlor!

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On February 9th, 1960, The Pesticide Regulation Branch, U.S.D.A., issued specific directions allowing the continued use of Heptachlor on corn, cotton, and other major crops.

FIRE ANT CONTROL

DONALSONVILLE, GA. — Farm agents said recently that a heavy infestation of fire ants in Seminole county, in southwestern Georgia, is apparently being checked by heavy spraying.

Federal and state agricultural officials launched the eradication program when the fire ants spread rapidly over the county early this year, threatening livestock and wildlife.

C. M. Shotts of the U.S. Department of Agriculture, said the ants have covered all areas of the county. Spraying with an airplane, he said, has reduced the ant population in a number of sections.

A contract for 100,000 acres of land was awarded to Mel Christler of Greybull, Wyo. The application of the insecticide is part of a cooperative program being conducted by the Georgia Department of Agriculture and USDA.

A second round of controlling the ants will be carried out in three to six months, according to the program.

Merger Contemplated

MINNEAPOLIS—A committee has been appointed by the boards of directors of the Rust Prevention Assn. and Northwest Crop Improvement Assn. to study a proposed merger of the two organizations.

The joint study committee will consist of Totton P. Heffelfinger, P. Norman Ness, Don A. Stevens and Royce Ramsland. The latter two are chairmen of their respective boards.

Present activities of both organizations in the field of agriculture will be surveyed, with exploration of possible expansion into other areas. A program which will benefit producers, processors and handlers of agricultural crops and those who provide services and equipment to the farm market will be developed.

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Behavior of Rice Weevil Observed Through X-Ray Technique at K-State University

MANHATTAN, KAN.—X-rays are being used by the department of entomology at Kansas State University to study the behavior and development of the rice weevil inside wheat kernels.

As a result of these studies, K-State may have the only series of X-rays showing cannibalism of one rice weevil on another, says John R. Pedersen, K-State entomologist.

Under a \$29,210 grant from the Public Health Service, the researchers have been studying effects of environment on stored grain insects for the past two years. With the use of X-ray, they hope to observe development of the insects under several different sets of environmental conditions and X-ray technique serves to make certain aspects of the study more efficient.

Two hundred infested wheat kernels were used in the current phase of the projects. These were X-rayed daily throughout the development cycle of the weevil, which takes about 33 days. The radiographs, in turn, are blown up in black and white prints

and mounted in sequence for analysis.

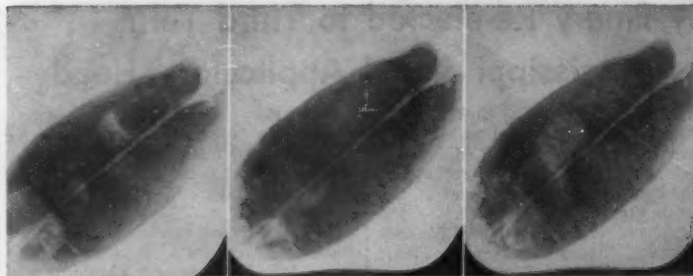
X-ray techniques to determine grain infestation on a commercial basis were developed in 1950 by two K-State staff members, Max Milner and Robert Katz. X-ray is now used on a commercial basis in many flour mills and elevators to detect infestation, Mr. Pedersen says.

K-State spokesmen say their efforts represent the first attempt to study the "biology and behavior" of insects inside the wheat kernel with the use of X-ray.

So far the entomologists have been using an X-ray grain inspection unit about the size of an apartment-size stove, but recent developments indicate that use of a new X-ray microscope gives a much better picture.

Mr. Pedersen explains that the present studies are in the area of basic research—to learn more about the tunneling habits of the insects, their rate of development inside the kernel, and other behavior.

"However," he adds, "we may discover, during the course of our



PHOTOGENIC WEEVILS—As a result of X-ray studies on the biology and behavior of the rice weevil inside wheat kernels, Kansas State University probably has the only series of X-rays showing cannibalism of one weevil on another. Picture 1 shows two weevils inside a single kernel of wheat, while pictures 2 and 3 show the top weevil moving down into the other compartment.

studies, some trait which would be useful in the control of insects."

Only the rice weevil has been studied with X-rays so far, but the entomologist says he and his colleagues hope to expand their studies to include three other insects which develop inside kernels of grain—the granary weevil, lesser grain borer, and the Angoumois grain moth. The rice weevil and the lesser grain borer are more prevalent in Kansas than the other two.

Director of the public health serv-

ice project at K-State is Donald A. Wilbur, who is on leave studying grain storage conditions and problems in Mexico. Mr. Pedersen has assumed a portion of Mr. Wilbur's research work in his absence.

Kenneth A. Spencer Dies of Heart Attack

KANSAS CITY—Kenneth A. Spencer, chairman of the board and founder of Spencer Chemical Co., Kansas City, died Feb. 19 at the age of 58 at the St. Francis Hospital in Miami Beach, Fla., from complications following a heart attack he suffered Feb. 2. He suffered the heart attack while concluding a vacation cruise with Mrs. Spencer in the Bahamas.



Kenneth A. Spencer

A native of Columbus, Kansas, Mr. Spencer moved with his family at the age of nine to Pittsburg, Kansas, when his father, Charles F. Spencer, acquired control of the Pittsburg and Midway Coal Mining Co. Kenneth Spencer was also president of the coal company when he died. Mr. Spencer was graduated from the University of Kansas in 1926.

In 1941 the federal government accepted the plan of Mr. Spencer and the Pittsburg and Midway Coal Mining Co. to locate a synthetic nitrogen plant in southeastern Kansas. The Military Chemical Works, a wholly owned subsidiary of the coal company, was formed to construct and operate the Jayhawk Ordnance Works for the War Department. When the war ended in 1946, the name of the company was changed to Spencer Chemical Co. and the plant was purchased from the government to commence commercial peacetime operations.

Mr. Spencer, a pioneer of the chemical industry in the Midwest, led the company through a period of growth. In the 14 years from 1946 to 1960, the company grew from one plant to six; sales grew from \$12 to \$60 million. Products from Spencer Chemical Co. include nitrogen products for fertilizer materials, polyethylene, nylon and polypropylene plastics, nuclear fuels, dry ice and carbon dioxide products, argon, methyl alcohol and formaldehyde.

Mr. Spencer's industrial and business activities included serving on the board of directors of American Telephone and Telegraph, Armco Steel, Goodyear Tire and Rubber Co., International Harvester Co., National Coal Assn., Missouri-Kansas-Texas Railroad Co., and a number of others.

He was a member of the Business Advisory Council, which is advisory to the Secretary of Commerce, and a trustee of the Committee for Economic Development.

One of his most important projects for the growing scientific activities of the Midwest was his role as a founder and member of the board of governors of Midwest Research Institute in Kansas City.

Books on Pesticides

THE GARDENER'S BUG BOOK (1956)

Dr. Cynthia Westcott

The Complete Handbook of Garden Pests and their control. Information, scientifically accurate but easy to read on 1,100 insects, mites and other animal pests that attack trees, shrubs, vines, lawns, flowers, fruits and vegetables in home gardens. Illustrations in full color. Control measures combine the latest in chemical developments with time-honored cultural measures. Helpful to all who serve the general public and to truck farmers and fruit gardeners. 579 pages, cloth bound \$7.50

HANDBOOK OF AGRICULTURAL CHEMICALS—Second Edition

Lester W. Hanna, Agricultural Enterprises, Forest Grove, Ore.

As the title implies, this book contains broad information and tables on not only the chemical products themselves, but also on toxicity, residues, registration, terminology and emergency treatments. A fold-out chart gives compatibility data on numerous materials for formulators. Information on fertilizers includes soil elements, trace minerals, and application techniques. Descriptive material is also presented on fumigants, fungicides, herbicides, systemics, growth modifiers, livestock chemicals, rodenticides, and antibiotics. Information on materials and techniques is written fully with illustrations and tables. 490 pages..... \$5.95

INSECT PESTS OF FARM, GARDEN and ORCHARD—Fifth Edition (1956)

Leonard M. Peairs and Ralph H. Davidson

A standard text for 44 years. Includes insects affecting grasses, grains, cotton, legumes, vegetables, flowers, fruits, stored products, household goods and domestic animals. Contains a new chapter on insecticide formulations, spray mixtures, application equipment, etc. Material on forty new pest species added, including drastic changes in the illustration. 461 pages \$8.50

DDT and NEWER PERSISTENT INSECTICIDES

T. F. West and G. A. Campbell

The first and major part of book is devoted to the physical and chemical properties, manufacture, formulation and applications of DDT. The second part deals with other chlorinated hydrocarbons whose insecticidal properties have been discovered recently and compares these new insecticides with DDT. The preparation of aqueous suspensions, solutions, emulsions, and dusts containing DDT, the compatibility of DDT with other insecticides, fungicides and antibiotics are covered in detail. Contains dozens of tables on the solubility of DDT in various solvents, the catalytic activity of accessory substances in the presence of DDT, analogues of DDT, the comparative toxicity, hydrolysis and solubility of DDT analogues, the toxicity of DDT for almost all important insects, etc. Many illustrations \$8.50

PESTS OF STORED GRAIN AND GRAIN PRODUCTS

Richard T. Cotton, Stored Product Insect Section, U.S. Department of Agriculture, Washington, D.C.

Dr. Cotton's valuable book is full of practical up-to-date information on the problems of insect and rodent contamination. Some of the main topics covered are: methods of detecting contamination in cereal from rodents, birds and insects; prevention and control of insect infestation in grain; new methods of storage; methods of sanitation in grain storages and processing plants; the latest information on fumigation; heat sterilization; and protection of stored seed. This book is concise, readable, completely indexed and includes over 100 figures and illustrations. 304 pages, 8 1/2 x 5 1/2", photo offset, illustrated, cloth bound.... \$4.00

METHODS OF TESTING CHEMICALS ON INSECTS—Vol. I

Harold H. Shepard, chief, Agricultural Chemicals Staff, Commodity Stabilization Service, U.S. Department of Agriculture, Washington, D.C.

This is Vol. I of a proposed three-volume study. It describes methods of studying the effects of chemicals on the physiology of insects. Also covered are general techniques for applying chemicals to insects. It includes laboratory screening methods for determining the killing efficiency of insecticidal sprays, dusts and fumigants. Its 14 chapters are authored by prominent entomologists from USDA and State Experiment Stations. 355 pages; 8 1/2 x 5 1/2" photo-offset, cloth bound \$5.00

THE CHEMISTRY AND ACTION OF INSECTICIDES

Harold H. Shepard, Entomologist, U.S. Department of Agriculture, formerly Associate Professor of Insect Toxicology, Cornell University.

Treats the chemistry of insecticides, the history of their use, their commercial importance here and abroad, the nature of the major uses, the influence of environment on effectiveness. Materials are arranged according to their chemical relationships. Two chapters relating to organic compounds largely new as insecticides. Illustrative data in form of tables, and a convenient appendix of equivalents arranged for practical use in the field. 504 pages \$10.50

ADVANCES IN PEST CONTROL RESEARCH—Vol. 2

Edited by R. L. Metcalf, University of California, Citrus Experiment Station, Riverside, Cal.

This book, an annual series, treats pest control as a distinct discipline, discussing chemical, physical and biological methods from the common viewpoint of the basic principles involved and applying them to the control of weeds, fungi, bacteria, insects—all organisms which compete with man for his food supply, damage his possessions, or attack his person. Each annual volume contains chapters contributed by outstanding scientists having intimate knowledge of various pertinent topics within the field, presenting not only comprehensive reviews of recent advances but also critical evaluation of new developments and concepts. This volume continues the same plan which won immediate acceptance for the series. In eight chapters, a group of experts present and interpret recent advances in subjects ranging from the innate toxicity of fungicides to isotope dilution techniques and the spread of insecticide resistance, 1958; 434 pages, 110 illustrations, 43 tables \$12.50

INSECT, FUNGUS AND WEED CONTROL

Dr. E. R. de Ong

The information is grouped according to field of application rather than to chemical composition or nomenclature. Chapters on insecticide label, seed disinfectants, herbicides, forest insects and diseases, livestock insects, and the pests found in household and industry. Fumigation of warehouses, residual sprays and preservatives for fruits, vegetables and wood products are covered. An up-to-date guide on pest control with the needs of operators, agricultural and structural specialists carefully considered. Shippers and warehouse personnel will find the book useful \$10.00

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So. Dakota Conference Lauds Soil Testing, Urges More Fertilizer Use on Grain Crops

BROOKINGS, S.D.—“A soils test is not perfect. But it can help assure that the biggest share of your customers will be satisfied customers.”

This is a statement some 125 fertilizer dealers heard during the first day of the recent 10th annual Fertilizer and Soil Management Short Course at South Dakota State College.

Paul L. Carson, associate professor of soils at State College, made the remark while speaking on “Guide Your Sales with Soil Tests.” He was one of several speakers appearing on the “dealers and industry day” part of the short course.

Mr. Carson, head of the soils testing laboratory at State College, said that a soil test offers the best practical guide to fertilizer use. If full results do not happen, he said, the dealer must be able to explain “why”

to the customer. He challenged dealers to use a follow-up program of “checking results” with farmers which can “increase understanding and decrease misunderstanding.”

Burton L. Brage, director of resident instruction, explained ways of converting fertilizer basis from oxide to an elemental base.

Glenn L. Schrader, Sioux Falls, Minnehaha County extension agent, explained the results of a pilot 4 H Club fertility program in his county last year.

A panel consisting of Wesley Martin, Lake Preston; Andy Anderson, Canton; and Clarence Schladweller, Madison, all fertilizer dealer representatives, and Elton Budahl, Lake County extension agent, described dealer-county extension fertilizer demonstration programs in Lake and Kingsbury counties. The programs, they agreed, were a valuable way of keeping farmers informed about the value of fertilizer.

Other speakers included William P. Martin, University of Minnesota; Burdette Solum, Watertown, bank representative; Emmet J. Hoffman, merchandising editor, Croplife, Minneapolis; and M. O. Williams, chief agricultural economist of the National Plant Food Institute, Washington, D.C.

Ed Williamson, extension soils specialist from South Dakota State, said that proper use of fertilizers, along with other good management practices can double the current yields of corn, oats, barley and alfalfa in South Dakota. Studies indicate that for each fertilizer dollar invested in Minnehaha County approximately \$2 are returned, he said.

L. O. Fine, head of the agronomy department at South Dakota State College, discussed continuous corn production's effect on soil fertility.

A study of a test plot where corn had been grown continuously for 18 years indicated an average annual loss of 62 lb. nitrogen an acre in the plow layer. Wheat used 23% of the



FERTILIZER PLACEMENT SPEAKERS—Group of specialists who spoke on “Fertilizer Placement” short course held recently at Abraham Baldwin Agricultural College in Tifton, Ga. Left to right: Jeff Davis of Albany, operator of Southeastern Liquid Fertilizer Co.; G. L. Dozier, vice president of Central Georgia Fertilizer Co., Macon, and a state director at large and immediate past president of the Georgia Plant Food Educational Society, and Dr. Joseph M. Good, nematologist at the Georgia Coastal Plain Experiment Station. Standing are S. A. Parham, agronomist, and Dr. Silas A. Harman, associate horticulturist at the Coastal Station.

NEW OFFICERS

BROOKINGS, S.D.—C. W. Schladweller, Madison, was reelected president of the South Dakota Fertilizer Assn. during its recent first annual meeting held here in conjunction with the 10th annual Fertilizer and Soil Management Short Course.

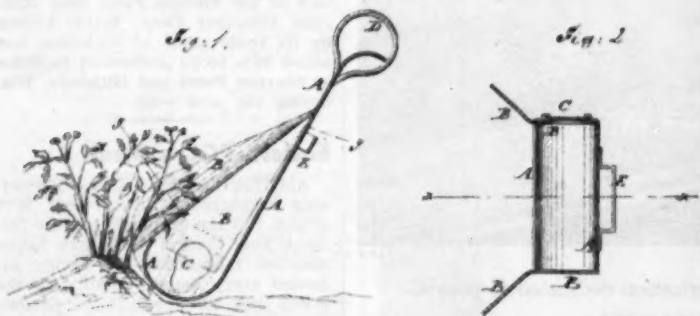
Other officers include Al Klaverkamp, Sioux Falls, treasurer and executive secretary. Steve Jones, Brookings, was appointed recording secretary.

New directors are Boyd Meyer, Alexandria, and Mervin Nelson, Howard, both for three years. Mr. Klaverkamp was named for two years to fill an uncompleted term of Wesley Martin, Lake Preston.

Holdover directors include Lester Hansen, Kransburg; Ole Palmquist, Milbank and Andy Anderson, Canton. Leo Fuhr, Brookings, is ex-officio member of the group.

The directors appointed Earl Baxter, Onida, to head a legislative committee.

Saga of Insect Control



AN IMPROVED TRAP for removing bugs from potato vines was patented back in 1871 by one Samuel Creighton, Lithopolis, Ohio. The invention, described in the patent papers as being “simple in construction, effective in operation and convenient in use,” was designed to catch bugs as they fell from vines after being brushed off.

Here is the way the inventor described its operation: “In using the trap, it is placed at one side of the hill or hills of plants, with its top or upper end more or less inclined, according to the size of the plants. In this position the lower branches of the plants will overhang the forward edge of the plate ‘A’, and the flanges of the sides ‘B’ will embrace the second and third sides of the hill, leaving the fourth side exposed. The operator then holds the trap with one hand, and with a broom he strikes the exposed side of the plants, knocking the bugs into the trap. The bugs, as they are knocked into the trap, slide down the plates ‘A’ and ‘B’ into the pocket. In the case of active bugs that might escape the trap, water may be placed in the pocket into which they fall as they slide down the plates.”

In the illustrations above, Figure 1 is a detailed sectional drawing of the trap as viewed from the side. Figure 2 is a detailed sectional view of the same from above.

nitrogen in 18 years while oats and barley used 16 and 14.5%. Rye was relatively easy on the soil, using only 4.2% during the lengthy trial.

Mr. Fine said that there is probably nothing fundamentally wrong with continuous corn culture if man will take the trouble to see that the soil is not lost or its productivity destroyed in the process.

Joe V. Kern Promoted By U.S. Borax

LOS ANGELES—Joe V. Kern has been named assistant to the resident manager of the U.S. Borax & Chemical Corp. potash mines and refinery at Carlsbad, N.M., announced Earl H. Miller, resident manager.



Joe V. Kern

Mr. Kern, who formerly served as field accountant, joined the company in 1951 as a clerk in the mine office. Subsequently, he was advanced to the positions of price clerk and buyer, statistician and field accountant.

Mr. Kern is a graduate of Texas Western College, receiving a bachelor of business administration degree in 1949.

Shipment Values Rise

WINNIPEG — Value of factory shipments by the fertilizer industry in Canada reached a near-record total of \$89,146,000 in 1958, up 6.4% from 1957's total of \$83,808,000 but down 3.6% from 1955's all-time high of \$92,499,000, the Dominion Bureau of Statistics reported.

Number of establishments increased to 45 from 44 in 1957, while employees declined to 2,993 from 3,011 and their salaries and wages advanced to \$13,425,000 from \$12,899,000. Cost of materials and supplies rose to \$48,594,000 from \$47,134,000.

SMITH-DOUGLASS SALES

NORFOLK, VA. — Net sales of \$19,948,252 for the six months ended Jan. 31, as compared to \$16,211,871 for the same period last year, were reported by the Smith-Douglass Co., Inc., fertilizer and chemical manufacturer, with home offices in Norfolk. Net income reported for the six months was \$1,270,901, and earnings per common share were \$1.23, compared to \$856,388 and 82¢ during the same period last year.

ANNUAL REPORT

NEW YORK—Gross revenue from sales of Texas Gulf Sulphur Co. in 1959 amounted to \$63,597,000 an increase of 11.5% over the previous year's total of \$57,057,274, according to a preliminary report. Net income for the year amounted to \$13,338,000, equivalent to \$1.33 per share on the 10,020,000 common shares outstanding. This compares with 1958 net income of \$13,382,967, or \$1.34 per share on the same number of shares.

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Stevens Industries Acquires Additional Georgia Facilities

DAWSON, GA. — Stevens Industries, Inc. has announced the acquisition of the properties of the Southern Cotton Oil Co. in Dawson, Ft. Gaines and Sutton's Cross Roads, Ga.

M. E. Williams, president of Stevens, said the transaction has already been consummated and that properties are being consolidated as rapidly as possible. The financial consideration was not made public.

Both Mr. Williams and officials of the Southern Cotton Oil Co. simultaneously announced that the properties were sold to Southern Manufacturing & Investment Co. which, in turn, leased them to Stevens Industries.

Mr. Williams, Gelse Dozier and Ed Young, all top executives in Stevens Industries, were incorporators of the new corporation which has an authorized capital of \$500,000.

Although definite plans for complete utilization of all the properties have not been formulated, Mr. Williams announced that Dawson SCOCO properties are now in the process of remodeling for use in this season's business.

He said the fertilizer plant at Ft. Gaines will be moved to Dawson and installed in the Dawson plant to increase its output and efficiency.

In addition to building changes being made in the Dawson SCOCO plant, Mr. Williams said automatic weighing and bagging equipment, plus improved loading facilities, will be added.

Winding up with four cotton gins, the tentative official plan is to con-

solidate three into a completely modern gin in Dawson and continue operation of the gin at Sutton's Cross Roads after modernization.

The insecticide plant, a principal operation of Stevens Industries, will be particularly benefited by the acquisition.

Mr. Williams pointed out that it will enable the company to greatly expand this phase of its operations.

One of the large SCOCO warehouses on the railroad siding already has been turned over to the insecticide division to be used in supplying the hundreds of technical and basic products used in the manufacture of insecticides. This will result in both an increased efficiency, improved manufacturing and permit the addition of new items to the "Master Brand" line which Stevens markets throughout the Southeast.



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whole Swift organization dedicated to providing better phosphate service.

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KICKAPOO

(Continued from page 1)

years and is one of the oldest fertilizer concerns in the nation. It manufactures and distributes Badger Brand fertilizer, Royal Ribbon feeds and various agricultural chemicals.

New officers elected include Phillip Q. Sawin, Madison, as president; Mr. Baldridge, executive vice president and general manager; Raymond A. Russell, Wisconsin Rapids, secretary, and Dorothy M. Sawin, Madison, treasurer.

Mr. Sawin is president of Kickapoo and Mr. Russell is also secretary of the Stevens Point firm. Also in the reorganization a new board of directors was elected. It consists of Daniel Cooney, vice president, Kenosha National Bank, Mr. Sawin and Mr. Baldridge.

Mr. Baldridge said the new management will continue to operate with present brand names and through the same distribution channels as previously.

He added that he will take advantage of the excellent facilities of N. S. Koos & Sons.

"We will strive to enhance the firm's position in the state fertilizer industry," Mr. Baldridge said.

Besides the home office plant in Stevens Point, Kickapoo has production facilities in Hillsboro, Wis. and warehousing operations in Gratiot and Shiocton, Wis.

★ ★ ★



James Kerrigan



Raymond A. Russell

KICKAPOO CHANGES—James Kerrigan joined the Midwest Fertilizer Corp., Stevens Point, Wis., in an executive capacity, on Feb. 25, the company has announced. He was one of the founders and a director of the Vorhes Chemical Co., Charles City, Iowa. Raymond A. Russell, former comptroller, becomes assistant to the executive vice president and secretary of the Stevens Point firm. Midwest Fertilizer Corp., better known by its trade name of Kickapoo, has added 30% to its production facilities at Stevens Point and Hillsboro, Wis. during the past year.

Eastern PCO's Meet

AMHERST, MASS.—Some 138 persons registered at the recent 20th annual Eastern Conference of the National Pest Control Assn. here. Seven received recognition for having attended every annual meeting of the group and three additional persons were given certificates for 15 years' perfect attendance at the meeting.

Dr. Norman Ward, veterinarian from Worcester, Mass., addressed the group on the control of ectoparasites on livestock, stressing the need for cooperation between the pest control operator and veterinarians.

The annual banquet speaker was Dr. Kenneth MacLeod, commissioner of public health of Worcester, Mass.

NAMED RESEARCH BIOLOGIST

KANSAS CITY—Dr. Robert W. Earhart has been appointed research biologist in the research department of Chemagro Corp., Kansas City, announced H. F. Tomasek, president. Prior to joining Chemagro, Dr. Earhart was professor of botany and plant pathology at Clemson Agricultural College, Clemson, S.C. He previously served as plant pathologist with the U.S. Department of Agriculture and the University of Florida.

Iowa Sociologists Stress Industry's Stake In Potential Fertilizer Use Increase

By GEORGE M. BEAL
and JOE M. BOHLEN*

Rural Sociologists
Iowa State University

Introduction

The ultimate test for fertilizer, both from the point of view of value to the farmers and profit to the fertilizer industry, should be optimum use of fertilizer by the farmer. There is general agreement that there is still a tremendous potential for increased use of fertilizer. Many farmers do not use any fertilizer. It is estimated that those farmers now using fertilizer could use three times the present amount economically. The fertilizer industry has a tremendous stake in this potential increase in fertilizer use. They not only have a stake, but an opportunity and responsibility to help increase fertilizer use by farmers up to an optimum level.

The fact that the ultimate fertilizer customer, the farmer, has a relatively favorable attitude toward the manufacturers of fertilizer is illustrated by our Iowa statewide data. Seventy percent chose the following statement as the one that best fit their idea of "how the manufacturer, the people from whom your dealer buys his fertilizer, look at their job: 'While manufacturers want to make money selling us fertilizer, they are also trying to develop new fertilizers that will help us produce more efficiently—make more money.'" Thirty percent chose the less favorable statements such as: the manufacturer is only interested in how much money he can make (3%); manufacturers are so interested in making money they stretch their fertilizer claims (9%); and, manufacturers don't realize how important it is for farmers to keep costs low (15%). Then, why don't farmers purchase more fertilizer?

Obtaining optimum fertilizer use by farmers is a complex problem. Many factors, organizations, agencies and institutions are involved. This paper focuses only on one specific aspect of the complex problem—the fertilizer dealer. Fertilizer dealer is used in this paper to mean that entity from which the farmer purchases his fertilizer.

Research evidence points up the important role that the fertilizer dealer plays in the farmer's decision-making progress regarding fertilizer use. For instance, 96% of the farmers expect the fertilizer dealer to be a reliable source of information about fertilizer use. No one can deny that the dealer is the last link in the chain of communications and sales of fertilizer to farmers. Of special significance to the fertilizer manufacturer

and mixer is the fact that only approximately 13% of the farmers in our sample made what we might call a high product differentiation between brands of fertilizer—another 18% had a "medium" product or brand differentiation. On the other hand, 52% of the farmers stated that they buy their present brand of fertilizer "because my dealer handles it." Thus we can see that to a large extent the brand selection is being made for these farmers by the dealer. Our data also points up the fact that many dealers play an important role in recommending analyses, amounts and methods of application. Again, this points up the importance of the dealer.

The existing marketing structure and the role of the dealer in it is giving concern to many in the fertilizer industry. The future may bring about changes in this marketing structure. However, with the present dealer structure there are many dealers who are selling a relatively large volume of fertilizer who think the fertilizer business is "excellent," who think the margin of profit is adequate, and who are "pushing" ferti-

lizer sales. It appears that dealers can be motivated to do a top education and merchandising job. The fertilizer industry along with other groups have an opportunity and a responsibility to help get the job done.

We believe that the research findings from our Iowa State University projects provide some insights that will help better understand the problem, suggest some objectives to shoot for and some action that should be taken to help get the job done.

The Data Base

The data from which this report is written are taken from three phases of Iowa Agriculture Experiment Station Project No. 1352, a cooperative project with the Agricultural Economics Branch of the Tennessee Valley Authority. For the most part these data are based on: (1) a statewide random sample of 315 Iowa farmers, farming more than 40 acres, and (2) a statewide random sample of 118 Iowa fertilizer dealers. In addition some findings will be reported from a random sample of 120 farmers drawn around 12 selected dealers

EDITOR'S NOTE—The accompanying article is the text of the "flannel-board" presentation worked up by Dr. Bohlen and Dr. Beal. It was presented for the first time at the 12th Annual joint meeting of the Midwestern Agronomists and Fertilizer Industry at the Edgewater Beach Hotel in Chicago, Feb. 12.

and an additional sample of farmers who had their soil tested as a result of a dealer soil test promotional campaign—these samples were drawn in east-central Iowa.

Who Sells Fertilizer?

Characteristics of the business

What is the type of business structure of the dealers selling fertilizer:

| | % of total | % of dollars | % of fertilizer sales |
|---------------------|------------|--------------|-----------------------|
| Sole proprietorship | | | |
| Farmer 9% | 37 | 2 | 21 |
| Other 28 | 19 | | |
| Corporation | 25 | 50 | 50 |
| Partnership | 20 | 8 | 8 |
| Cooperative | 18 | 21 | 21 |

*Includes Farm Bureau Service Companies.

What is the major product line of dealers who sell fertilizer:

| | |
|------------|--|
| Grain | 36% |
| Feed | 20% |
| Farming | 9% |
| Petroleum | 9% |
| Fertilizer | 9% |
| Seed | 5% |
| Other | 12%—(eight different major product lines—no single product line constituting more than 3%) |

Other business characteristics

The annual total sales volume in 1957 of those dealers selling fertilizer ranged from \$12,000 to \$2,400,000. Forty-one percent had annual sales of \$200,000 or less.

Fertilizer volume ranged from \$1,000 to \$960,000 in 1957. Twenty-five percent of the dealers sell less than \$10,000 worth of fertilizer—60% sell less than \$31,000. Twenty-five percent sell over \$50,000 worth of fertilizer. On the basis of our sample it appears that 25% of the dealers sell 70% of the fertilizer in Iowa. On the average, fertilizer sales make up approximately 14% of the total volume of business for the fertilizer dealers in Iowa.

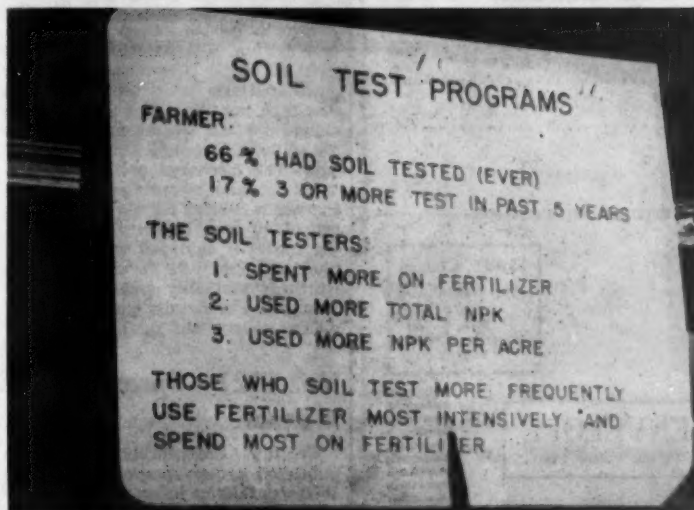
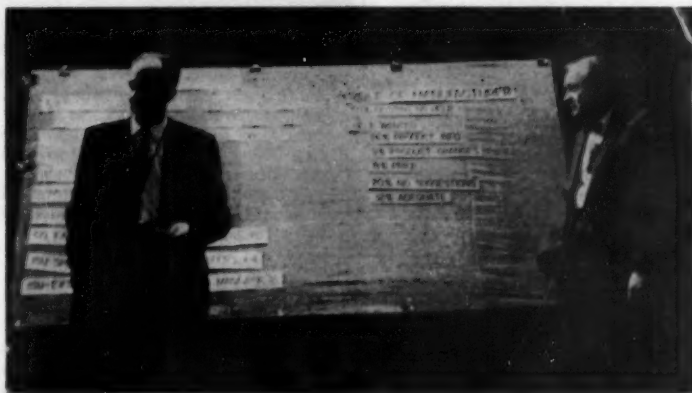
The dealers' average gross profit margins (mark-up from purchase price) varied from 1 to 35% with an average mark-up of 9.3%. This compares with a 14.4% average mark-up in other departments of their businesses. Approximately one-fourth of the dealers had a mark-up of over 10% on fertilizer.

Gross profits on fertilizer ranged from \$100 to \$96,000. The average was \$3,700. Twenty percent of the dealers had total fertilizer gross profit of under \$500.

Dealer Attitude and Knowledge

Role of Fertilizer Department: (1) 26% evaluated their fertilizer department as "a good money maker in itself." (2) 15% stated that it is "not a money maker," but they have to carry fertilizer to compete with other

(Turn to SURVEY, page 14)



DR. GEORGE M. BEAL AND DR. JOE M. BOHLEN (top photo), rural sociologists at Iowa State University, presented for the first time their flannel-board talk on a survey made of Iowa farmers and fertilizer dealers, at the 12th annual joint meeting of the Midwestern Agronomists and Fertilizer Dealers. The meeting took place in Chicago, Feb. 12. The bottom photo shows one of the slides used by the two to punctuate their presentation.

*Data in this paper are from Iowa State University Experiment Station Project No. 1352 done in cooperation with the Agricultural Economics Branch, Division of Agricultural Relations, Tennessee Valley Authority. The project is under the co-leadership of George M. Beal and Joe M. Bohlen, professors of rural sociology, Department of Economics and Sociology, Iowa State University. Data are taken from three phases of Project No. 1352. These phases were under the leadership and supervision of assistant professor John Harp, and graduate assistants Larry Campbell and Quentin Jenkins, respectively. They were assisted by graduate assistant research team members Daryl Hobbs, Larry Kasperbauer, Richard Warren, Ron Powers and Spencer Hildahl.

WHAT'S NEW

IN PRODUCTS • SERVICES • LITERATURE

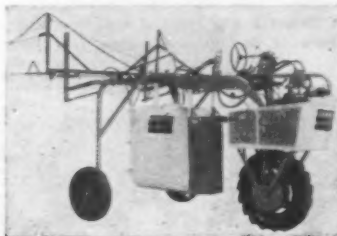
To obtain more information about items mentioned in this department simply: (1) Clip out the entire coupon in the lower corner of this page. (2) Circle the numbers of the items of which you want more information. Fill in the name and address portions. (3) Fold the coupon double with the return address portion on the outside, and fasten the edges with a staple, cellophane tape or glue. (4) Drop in the mail box.

No. 6025—Spray Mulch Booklet

Alco Oil & Chemical Corp. announces the introduction of "Vulcanol" for use as a spray mulch along highways and landscapes to control soil erosion and speed seed germination. A color booklet, describing in detail the advantages, applications and equipment required; recommended dilutions, typical Vulcanols, and the colors in which they are available, can be obtained by checking No. 6025 on the coupon and mailing to this publication.

No. 6023—High-Clearance Sprayer

Another model Hahn Hi-Boy Sprayer has been added to the line of Hahn, Inc. Designated Model H-180, the machine is designed to provide low-cost spraying for any size



farm, the company says. The model has many of the same features as more expensive models in the line, including aluminized-steel tank (150 gal.) and eight-row Ever-Level boom. Other features include an 18 h.p., two-cylinder Wisconsin engine with

four speeds forward and one reverse; "Live" pump drive for instant spray pattern; tread width adjustable to work 38 in., 40 in. and 42 in. rows, and boom height adjustable from driver's seat from 1 ft. to 12 ft. For details check No. 6023 on the coupon and mail.

No. 6024—Sprayer Catalog

Universal Metal Products Co. announces the availability of a 24-page catalog, known as U-60, illustrating its complete line of sprayers, dusters and allied products. The catalog includes five pages on the company's "Stroll'n Spray" compressed air series. Also included are dimensions, specifications and shipping information on every other company product. Covered are the hose-end sprayers, pump-gun sprayers, easy-carry oval-tank compressed air sprayers, power sprayers, slide sprayers, flame sprayers, fire fighter sprayers, knapsack sprayers and many others. For copies check No. 6024 on the coupon and mail.

Also Available

The following items have appeared in previous issues of Croplife. They are reprinted to help keep dealers on the regional circulation plan informed of "What's New."

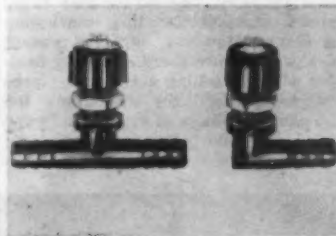
No. 6022—Tank Fittings

Information on its line of valves, gauges and indicators is available

from Texas Tank, Inc., in a bulletin describing its full line of tanks for holding anhydrous ammonia. Some tanks are for stationary use and others are mounted on farm wagons for transporting the material to work locations. Auxiliary equipment includes outage gauges, vapor return, pressure gauges, liquid level gauges, combination liquid fill and withdrawal valves and hose assemblies. Full information is available by checking No. 6022 on the coupon and mailing to this publication.

No. 6019—Hose Connector Nozzles

The Delavan Manufacturing Co. has announced the addition of nylon hose connector nozzles to its line of agricultural sprayer nozzles and accessories. Designed as a simple, inexpensive method of producing a corrosion resistant boom, the connector nozzles can be used with 1/2 in. cor-



rosion resistant hose with single or channel iron boom, the company says. They are available as "T" or double hose inlet and "L" or single hose inlet. The "L" shape connectors will be needed for boom and end nozzles. Lock nuts are supplied as standard equipment. For details check No. 6019 on the coupon and mail.

No. 6017—Air Row Crop Attachment

John Bean Division of Food Machinery and Chemical Corp. announces the availability of the Model 10-RC Aircrop, equipped with the Prestomatic push button remote control system. The attachment sprays a 40 ft. to 50 ft. swath. A uniform spray pattern is assured by seven disc-type nozzles and a specially designed discharge head equipped with air directing vanes, the company says. The discharge unit can be rotated to take advantage of prevailing winds. Suited for use with sprayers of 10 gpm capacity and larger, the model is equipped with a seven-blade aluminum 21 in. axial flow fan which is statically and dynamically balanced. For details check No. 6017 on the coupon and mail.

No. 6021—Sprayer Manual

Century Engineering Corp. has published a new sprayer manual for 1960, containing information on how to select the right sprayer for application of pesticides on livestock, pastures, and row crops; and also the correct type of equipment for use in applying fertilizers. Diagrams of spray patterns are shown, as are cut-away pictures of equipment. Written instructions are presented to stress the importance of timing, de-

scriptions of jet sprayers and boom sprayers, and a chapter on the control of weeds and insect pests. The booklet is available by checking No. 6021 on the coupon and mailing to this publication.

No. 6013—Spreader Bed Booklets

Fipps, Inc., has issued a booklet on the company's fertilizer, lime, phosphate spreader, featuring a complete description of the spreader bed. Features outlined in the booklet include the two-speed transmission, 19 ft.



hoods, 20 in. single distributor fan, spinner case and speed reducer. The spreader bed featured is designed for maximum spreading coverage with a minimum of trips through the field. For copies of the booklet, check No. 6013 on the coupon and mail to this publication.

No. 6016—Bulletin on Weed Killer

A bulletin containing information on the use of R-H Weed Rhap-20 in weeding corn fields, has been released by Reaser-Hill Corp. The colored, illustrated bulletin lists advantages of the product and has a step by step drawing showing the operational sequence using the product. A table shows the effects of various levels of weeds on corn yield. For copies, check No. 6016 on the coupon and mail to this publication.

No. 6012—Anhydrous Applicator

John Blue Co. announces a "Mono-Wheel" applicator for anhydrous ammonia. Attached directly to the tractor in a few seconds, the applicator has characteristics of maneuverability, economy and simplicity of design, the company says. The tank, carriage, pump, and drive are a completely self-contained unit. The pump, ground driven for accuracy, is a model



"ANDY" anhydrous ammonia metering pump. The tank is mounted on heavy duty saddles for operation under severe conditions, the company says. For details, check No. 6012 on the coupon and mail.

No. 6015—Systemic Insecticide

A systemic insecticide that gives young cotton plants protection against a variety of insects has been placed on the market by Chemagro Corp. Called "Di-Syston," the product has been registered for use by the U.S. Department of Agriculture. Ac-

Send me information on the items marked:

- | | |
|---|--|
| <input type="checkbox"/> No. 6012—Anhydrous Applicator | <input type="checkbox"/> No. 6019—Hose Connector Nozzles |
| <input type="checkbox"/> No. 6013—Spreader Bed Booklets | <input type="checkbox"/> No. 6020—Hose End Sprayers |
| <input type="checkbox"/> No. 6014—New Applicator Models | <input type="checkbox"/> No. 6021—Sprayer Manual |
| <input type="checkbox"/> No. 6015—Systemic Insecticide | <input type="checkbox"/> No. 6022—Tank Fittings |
| <input type="checkbox"/> No. 6016—Weed Killer Bulletin | <input type="checkbox"/> No. 6023—High-Clearance Sprayer |
| <input type="checkbox"/> No. 6017—Air Row Crop Attachment | <input type="checkbox"/> No. 6024—Sprayer Catalog |
| <input type="checkbox"/> No. 6018—Folder on Insecticides | <input type="checkbox"/> No. 6025—Spray Mulch Booklet |

(PLEASE PRINT OR TYPE)

COUPON NOT VALID AFTER 60 DAYS

NAME

COMPANY

ADDRESS

CLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL

FIRST CLASS
PERMIT No. 2
(Sec. 34.9,
P. L. & R.)
MINNEAPOLIS,
MINN.

BUSINESS REPLY ENVELOPE

No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY—

Croplife

P. O. Box 67

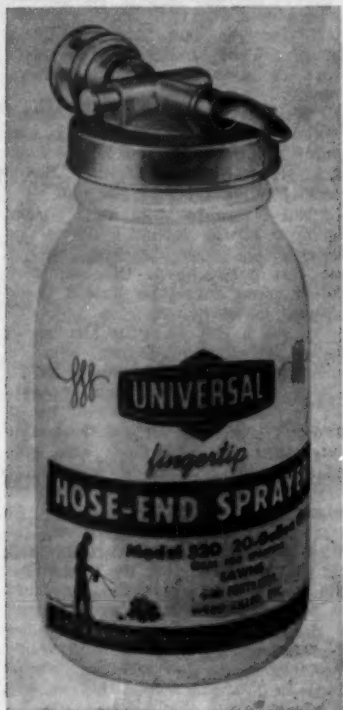
Reader Service Dept.

Minneapolis 40, Minn.

according to company literature, the product is effective against aphids, mites and thrips and is harmless to predators. It is applied to the ground in granular form at the same time the cotton seeds are planted. For more information, check No. 6015 on the coupon and mail.

No. 6020—Hose End Sprayers

A hose-end sprayer series featuring automatic blending, push-button shut-off valve and a shatterproof polyethylene jar has been introduced by Universal Metal Products Co., division of Air Control Products, Inc. The sprayer has two metering heads, a 6 gal. capacity on Model 506 and a 20 gal. capacity on Model 520, and



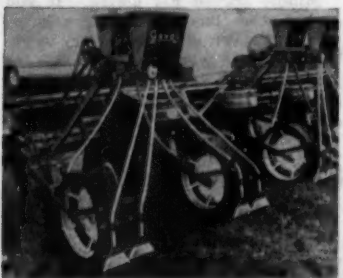
has brass internal mixing chambers which blend the spray concentrate and water at the right ratio, the company says. The conventional quart-size, shatter-proof polyethylene jar is used in both sizes. The push-button shut-off valve allows operator to shut off the spray at the sprayer. Both sizes have a completely adjustable nozzle for any angle of spray. For details check No. 6020 on the coupon and mail.

No. 6018—Folder on Insecticides

A folder containing information about Diazinon insecticide products has been released by Geigy Agricultural Chemicals, division of Geigy Chemical Corp. The folder contains brief information about Diazinon 25E, Diazinon 20S and Diazinon 2D. For copies check No. 6018 on the coupon and mail.

No. 6014—9 Applicator Models

Gandy Co. has announced the introduction of nine new models to its



1960 line of granular chemical applicators for soil insect and/or weed control. The company has 12 models

now, including units to fit any planting equipment, lister, cultivator or tool bar. Newly incorporated features include an improved rate-control metering system, a weather-tight hopper, a new mounting bracket, heavy duty stabilizer braces adjustable to fit all planters, a new drive sprocket, and a new distribution tube assembly. For more information, check No. 6014 on the coupon and mail.

EARNINGS ANNOUNCED

CHICAGO—Net earnings of International Minerals & Chemical Corp. for the second fiscal quarter ended Dec. 31, 1959, were up 61% on an 8% sales gain over the corresponding period a year ago. Net earnings for the second quarter this year amounted to \$1,191,000, or 46¢ per share on the 2,364,062 common shares outstanding, compared with \$739,000 or 28¢ per share on the 2,343,327 common shares outstanding a year ago. Before tax, earnings were \$1,609,000, compared with \$1,026,000.

Niagara Appoints Two For Technical Staff

MIDDLEPORT, N.Y. — Niagara Chemical Division, Food Machinery and Chemical Corp., has announced two appointments to its staff. They are Dr. Robert W. Metz as technical service to sales representative, and Dr. Irwyn Rammer as a research entomologist.

In the newly-created post of technical service to sales representative, Dr. Metz will be responsible for technical aid to the sales force—advising sales representatives in the proper use of Niagara chemicals and keeping them abreast of work on new products and general progress in the field of pesticides. He will also be concerned with liaison between Niagara's agricultural and technical service departments as well as contact with state and federal agencies regarding registration of products.

With headquarters at Middleport, N.Y., Dr. Metz' activities will be

carried on in the Niagara region encompassing New York, Pennsylvania, New Jersey, Maryland, Delaware, Virginia, West Virginia, Washington, D.C., and North Carolina.

Dr. Rammer, as a newly appointed entomologist in the research and development department, will operate from Niagara's Richmond, Cal. facilities.

He joins Niagara after serving with the University of California where he was a research assistant concerned with instruction in economic entomology. Dr. Rammer received his entire education at the University of California, Davis, California.

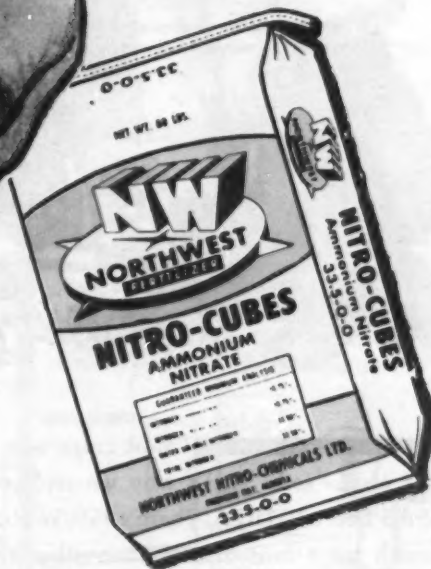
FERTILIZER FEATURED

VALDOSTA, GA.—A stock of garden fertilizer is being featured by the new Garden Shop opened by W. T. Grant Co. the first week in February. The Garden Shop, which carries a wide variety of garden plants and fruit trees, is located at the rear of the main store at the parking lot entrance.

THERE IS A DIFFERENCE IN
AMMONIUM NITRATE FERTILIZERS



TRY
HIGH DENSITY
NORTHWEST
NITRO-CUBES
AND SEE !



LOOK FOR THE NAME NORTHWEST... A COMPLETE FAMILY OF HIGH ANALYSIS FERTILIZERS.

11-48-0 AMMONIUM PHOSPHATE 16-20-0 AMMONIUM PHOSPHATE-SULPHATE 27-14-0 AMMONIUM NITRATE-PHOSPHATE
24-20-0 AMMONIUM NITRATE-PHOSPHATE 33.5-0-0 AMMONIUM NITRATE (Nitro-Cubes)



NORTHWEST
Nitro-Chemicals Ltd.

MEDICINE HAT, ALBERTA, CANADA

SCHOENFELD AND MCGILLICUDDY



OSCAR & PAT

By AL P. NELSON
Croplife Special Writer

When Oscar came home from work that evening at exactly 5:45, his wife Minnie took one look at the tight set of his lips and she knew that he had had a hard day, probably with his partner Pat McGillicuddy. Although Minnie was a meek person and almost wholly dominated by her husband, there were times when she did have a little courage to express herself. One of these times was when Oscar was down or angry about something at the office. At such times he would usually listen to her.

"Oscar," she called as he silently hung up his coat on the elk's head rack in the front hall, "I have spare ribs and sauerkraut for supper."

Oscar's only reply was an indistinguishable grunt, and when Minnie heard it, she knew he was in a bad humor indeed, because spare ribs and sauerkraut was his favorite dish.

As she predicted, the next minute Oscar was in the kitchen, his face covered with a frown. "Ach, that Pat," he complained bitterly, "effery

time he comes back from one of them Chamber of Commerce or Rotary meetings he is full of wind."

Minnie looked puzzled. "Wind? What do you mean?"

"Always he shows up all excited with some new idea," Oscar growled. "Either he wants to advertise some more or promote some more or give prizes for farmers for this or that. Himmel, does that Irisher think we are the government handing schtuff out to efferybody? Now, do you know what he wants to do?"

"What?" Minnie lifted the lid from the sauerkraut kettle and the aroma

spread through the room, but Oscar paid no heed.

"He wants to gif the 4-H Club \$100 to make a fertilizer survey of our trade area. They shouldt go aroundt and ask farmers how many acres they intendt to fertilize this year and how many pounds per acre they are goink to use. They also haf to ask if the farmers haf already bought their fertilizer for this spring."

"\$100! That's a lot of money," Minnie agreed, lifting the sauerkraut out of the kettle with a big silver fork and then spreading the browned, baked spareribs over the top.

"Surveys!" Oscar retorted scornfully. "Let him make a collection survey. Let that Irisher hoof it to farmers himself and ask them schnobblers why they ain't paid their bills for the last three andt six months. That kindt of survey won't cost us anything but that Irisher's time."

"Well, let's talk about it later," Minnie said wisely. "Sit down and enjoy the meal. Don't let your liver get all worked up, Oscar. Never scold Pat right before you eat."

"But I like to scold him!" Oscar snapped, sitting down. "I like to say how terrible I think he is. Ach, if he was president of the country," he shivered, "we'd be busted twice as fast as we now are."

Minnie said nothing as she began to eat. Throughout the meal, between mouthfuls, Oscar kept up a tirade about his partner Pat. Then he pointed at Minnie. "Andt he toltt me if I didn't like what he didt I shouldt buy him out. Minnie," his eyes gleamed, "do you think we shouldt try it? Ach, maybe I can make it alone."

The cold hand of fear gripped Minnie's heart. Her big brown eyes fixed on Oscar. "All right," she said calmly. "Let us talk it over how it would work. I will get your apple pie now."

As Oscar tied into the big wedge of flaky apple pie, Minnie said, "Suppose we figure now what you would have to do if you owned the business all by yourself. Could you go around and smile at customers and shake hands with them, and ask them how their wives are, their daughters, their sons, their grandfathers, and anybody in the family who is sick?"

"No," Oscar exploded. "I would hate it. I don't like that oily schtuff."

Minnie went on practically in an even voice. "Could you slap customers on the back, call them good fellows, tell them jokes, buy them a beer or a free lunch?"

"Are you crazy?" Oscar roared. "I don't belief in givink nottink away. We got it. Let them come and buy it—for cash—if they want it."

"Would you go out to all the farm meetings day and night, attend farm weddings and celebrations and play the cello free of charge like Pat does?"

"No!" spluttered Oscar as if that word were the only one he had in stock. "Andt I can't play the cello. Years ago I used to play the accordion. But it broke; it's up in the attic."

"Then why not get it fixed?"

"No! It would cost too much."

Minnie stirred her coffee. "If you owned the business alone, Oscar, would you write good ads every week, telling people what the store had for sale and that your firm spreads fertilizer in bulk and that you do free soil testing?"

"No! No!" barked Oscar furiously. "Ach, I wouldt not run an adt for a couple of years. That Pat has overspent on adts so far ahead I'm afraid to think. Free soil tests. I don't belief in them. Let the farmer pay for efferythink he gets. Not me."

"And," said Minnie gently, "would you go down to the office four or five nights a week and work on displays maybe, or read farm and other

"And when you need nitrogen
you need **VITREA**"



"Most crops take a lot of nitrogen out of the soil. That's why we replace it every year with John Deere VITREA. There's 45% nitrogen in VITREA . . . much more concentrated than other types of bagged nitrogen fertilizer . . . so it's easier to handle . . . saves time for other work during the busy season. Vitrea won't corrode our equipment either. And it feeds the crop as it grows . . . resists leaching. Remember, son, a good farmer uses his time wisely . . . takes care of his equipment . . . follows soil test recommendations . . . and when extra nitrogen is needed, he uses VITREA."



Grand River Chemical Division of
DEERE & COMPANY

PRYOR, OKLAHOMA

Ads like this are appearing

in the following publications

to help you sell VITREA:

FARMER STOCKMAN

PROGRESSIVE FARMER

TEXAS FARMING AND
CITRICULTURE

SOIL AND WATER

SOUTHWESTERN CROP
AND STOCK

RICE JOURNAL

ARKANSAS FARMER

MEMPHIS COMMERCIAL
APPEAL

FARM JOURNAL

SUCCESSFUL FARMING

KANSAS FARMER

MISSOURI RURALIST

CORN BELT FARM DAILIES

ARIZONA FARMER

NEW MEXICO FARM
& RANCH

CALIFORNIA FARMER

COTTON FARMING

PRAIRIE FARMER

MICHIGAN FARMER

FARM AND RANCH

**ORDER NOW.
PROMPT DELIVERIES!**

THERE ARE 6 SOUND WAYS TO SELL IN '60 AND THE *Hi-D*[®] PROGRAM'S GOT THEM ALL!

OUTDOOR

Billboards in 879 locations spread across 13 top-market states in the South and Midwest.



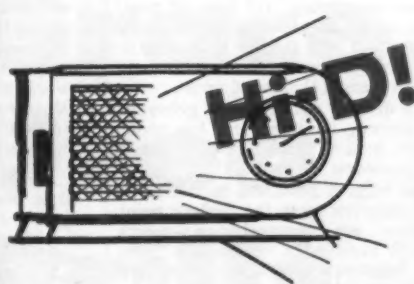
TELEVISION

A 10-state campaign for a solid 13 weeks emanating from 18 TV stations.



RADIO

A 13-week advertising program that saturates 17 states from 75 radio stations.



MAGAZINES

Full-page, four-color advertisements appear in "Progressive Farmer" . . . "Farm Journal" . . . "Successful Farming" . . . and "Farm & Ranch."



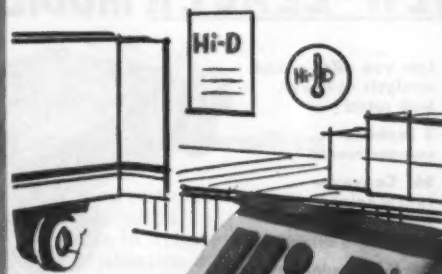
INSIDE THE STORE

Attention-getting point-of-sale material for in-store promotion. Includes Hi-D mobile . . . soil sample bags . . . counter display with Hi-D samples . . . wall banners . . . consumer folders . . . matches . . . and technical data service.



OUTSIDE THE STORE

Two brand-new items designed for posting outside your store or warehouse: attractive Hi-D metal sign and large clock-style thermometer identify your store as Hi-D headquarters.



Hi-D keeps your sales
on the grow in '60!



COMMERCIAL SOLVENTS CORPORATION Offices in Atlanta, Chicago, Cincinnati, Cleveland, Detroit, Kansas City, New Orleans, New York, St. Louis, Sterlington, La.

magazines to find out what's latest in fertilizer and farm chemicals?"

"Me?" Oscar sneered. "Well, I guess not. Displays I wouldn't do without. We got it, and they know it. If they got the cash let them come and buy. Magazines? I wouldn't clear Pat's desk and sell it and cancel all the farm magazine subscriptions and ask for refunds."

Minnie looked calculatingly at her husband. "Oscar, if you don't want to do some of these things that Pat now does, maybe—maybe you should try to stick it out with him a little longer."

Oscar considered for a moment, his eyes narrowing. "Ach, I know what I will do. I will schtep on all

his ideas real hardt. I will make it so hardt for him he will sell to me for a low price. Then I will buy him out."

"Really?" Minnie looked very fearful.

"Yah, and then I will hire a manager, much cheaper than what Pat gets. I will get a manager who likes to kidt with customers a little, but a feller who beliefs in cutting costs like me. Ach, that will be the day."

"Is there a man like that?" Minnie was pale.

"Ach, there must be," Oscar said proudly. "There are not many in this worldt, but there must be a couple. I will advertise in Croplife, for such a feller. By golly, dot is what I will do—when the time comes, of course."

SURVEY

(Continued from page 9)

businesses. (3) 31% evaluated their fertilizer department as an important service to bring in customers. And (4) 26% evaluated it as just another customer service.

Seventy-one percent evaluated the margin of profit on fertilizer as inadequate.

Thirty-one percent stated that the fertilizer business was poor—and an additional 23% stated it was average.

The dealers' dislikes concerning sale of fertilizer were stated in the following order: (1) labor involved in handling, (2) profit return, (3) credit, (4) seasonality, and (5) competition.

The dealer sees as his greatest factor limiting fertilizer sales **within his business** as follows, in order of frequency mentioned: (1) lack of time, effort or adequate services, (2) heavy competition, (3) farmer limitation in the form of capital, knowledge and weather, and (4) lack of profit.

The dealers' main reasons given for not pushing fertilizer are: low profit return, lack of time, lack of facilities and problems of credit.

The biggest problems in the fertilizer industry, from the dealer's point of view are: competition, farmers lack of knowledge, seasonality, pricing, handling, credit and time involved in selling (in that order).

On the average, dealers gave correct answers to less than half of the items in a fertilizer knowledge scale.

Forty-two percent of the dealers

see their role with farmers as just "a seller of needed goods and services" rather than a consultant to the farmer on farming and fertilizer matters.

From the above answers it can be seen that there are many factors limiting the dealer sale of fertilizer. There are many reasons that seem to be related directly to price and competition. One may infer that a basic element permeating the attitudes of many of the dealers is that the profit made from fertilizer is not adequate to compensate them for the time, energy, management and capital inputs they might put into their fertilizer department compared with other departments of their business. Certain types of fertilizer business structure where lines of authority run vertically up from the dealer lend themselves more easily to manufacturer and mixer influence. However, if the manufacturer and mixer look objectively at these attitudes it seems that most of them can be changed and that he, the manufacturer or mixer, has a role in helping modify almost all of them.

On the Positive Side

It is obvious that there are many negative attitudes and opinions held by dealers about the fertilizer business. However, many of these attitudes and opinions can be changed. Understanding these attitudes and the basis for them should enable the fertilizer industry to take more direct measures to remove the causes of these attitudes or change the attitudes. The fact that these attitudes are not held by all dealers, and in

fact that some dealers are susceptible to change, is indicated by the following data:

22% of the dealers say the fertilizer business is "excellent"—an additional 5% say it "has a great potential."

27% say their fertilizer department is a "good money maker in itself."

28% say the margin of profit in fertilizer is adequate.

45% see themselves as a consultant to the farmer on fertilizer matters.

76% wish additional fertilizer product, use and application information.

75% desire additional information on new improved fertilizer sales techniques.

35% are highly oriented toward the adoption of new merchandising techniques.

26% have relatively high knowledge of fertilizer and fertilizer use.

27% sell over \$50,000 worth of fertilizer.

10% say they are pushing fertilizer as hard as they can—and this group has three times higher total fertilizer gross profit than does the average dealer.

The Role of Services in Fertilizer Sales

The importance of services in successful fertilizer business has been emphasized many times by different individuals and groups. However, there has been little analysis of the role of services and the contribution they make to fertilizer dealer's success.

Time will not allow for a complete discussion of the role of services in the success of fertilizer dealers. Two main facets will be briefly discussed: (1) services in a general context, and (2) two specific services—soil testing programs and test plot demonstrations.

The word "services" is used in many different ways. The term is broadly used to apply to a great variety of activities related to fertilizer. These range from things like price cutting, discounts and hand bills to types of bulk application and basic educational programs such as soil test programs and test plot demonstrations.

One thing our data clearly indicates is that business success is not necessarily related to the number of services offered. Rather, success is more related to the type of services offered and how well planned and how intensively they are carried out—the way the dealer perceives and carries out his merchandising role. In general the offering of handling and application services, and basic educational services such as soil test programs and test plot demonstrations and clinics are much more highly related to favorable dealer attitudes toward the fertilizer business and fertilizer business success than are price discounting "services." Also, in terms of the benefit to the ultimate customer, the farmer, it can be logically argued that the benefits from a two to five percent discount on price may be a very small benefit compared with selling to the farmer at a fair price and helping him get the returns that he should from proper fertilizer use.

What do farmers say about services?

In our statewide farmer study the respondents were asked to complete the sentence, "I wish my fertilizer dealer would . . ." Of the farmers who had specific suggestions for their dealers, 38% said "reduce prices." However, 54% suggested such things as: more services, give me more information, and sponsor test plots and demonstrations.

The farmers were asked if there were any services offered by dealers that were so important as to cause them to change dealers. Sixty-nine percent replied "yes," 19% said "no"

and the remainder stated since they did not have a fertilizer dealer they "didn't know." Those who replied yes, (69%) were asked what services would cause them to change dealers. Of this group, a number gave more than one answer: 51% mentioned soil testing services, 29% mentioned spreading services, 17% mentioned basic fertilizer information and 11% mentioned credit.

It appears the farmer is service-oriented!

What do dealers say?

When the statewide sample of dealers were asked for the main reasons for their success in the fertilizer business, services in general was the most frequently mentioned factor, by 31%. More specific services such as soil sampling, credit, etc. were mentioned by an additional 17%. Other sales techniques were mentioned by 17%. Customer loyalty was mentioned by 9% and specific product quality was mentioned by 8%.

Services being offered:

Dealers are presently offering a wide range of services. The table below indicates the percent of dealers offering the various types of services. In general the dealers thought they were now offering more services than they should offer. However, there were four services that were the exception—more dealers thought they should be offering them than were now offering them. Those services were of the educational type: soil testing with own laboratory, taking soil samples for farmers, spring or winter fertilizer clinics and fertilizer test plot demonstrations with a specialist present.

The table presents data gathered from the dealers regarding services offered and desired. The same basic point can also be approached from the farmer's point of view.

Services Offered by Fertilizer Dealers

| Service offered | Offering % |
|--|------------|
| Credit | 79.8 |
| Help farmers plan fertilizer programs | 75.4 |
| Discount for farmer hauling own | 68.6 |
| Seasonal discounts | 68.6 |
| Newspapers, free sheet, radio | 58.5 |
| Volume discounts | 55.1 |
| Calling on farmers | 52.5 |
| Interpret soil test results | 50.8 |
| Bulk application | 50.0 |
| Send in soil samples | 49.2 |
| Throw away and mailing | 38.4 |
| Small dry fertilizer spreader | 35.4 |
| Take soil samples for farmers | 34.7 |
| Fair displays and booths | 24.4 |
| Spread liquid fertilizer | 17.8 |
| Spring or winter fertilizer clinic | 16.9 |
| Fertilizer test plot examination for farmers with specialist present | 14.4 |
| Ahhydrous applicator | 11.9 |
| Soil testing (own lab) | 10.2 |
| Cash discount | 8.5 |

Farmers were given an array of 20 services and asked to check "what services offered by fertilizer dealers are important to you." The farmers were also asked whether or not their dealer(s) offered the services checked. With one exception, mass media advertising, the farmers checked as important more services than were now being offered by their dealers.

There were two major areas of relatively great discrepancy—many farmers wanted a specific type service not being offered by their dealers. The greatest discrepancy was on fertilizer test plot demonstrations—30% of the farmers ranked it as an important service and only 6% said their dealer(s) offered it. The next greatest discrepancy occurred in the area of soil testing—showing the farmer how to take soil samples and mailing in soil samples. Fifteen percent more farmers checked this as an important source than stated their dealer offered it as a service. Two additional educational services had the next highest discrepancies, that is farmers thought they were important but their dealers weren't offering them; they were calling on farmers to check fertilizer results and fertilizer clinics.

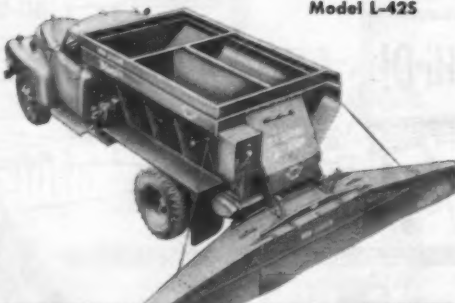
Progressive Dealers

In our statewide dealer study a scale was developed to measure the dealer's attitude toward the adoption

Accurately Blends and Spreads 3 Fertilizers at Once! NEW LEADER MOBILE BLENDER

Model L-425

- Lets you offer mixed analysis at lower, bulk rates!
- 3 Separate compartments!
- 36" Conveyor synchronized to speed of truck by drive shaft drive!
- 7.0 H.P. Engine drives Twin Spinners!



DEMAND FOR CUSTOM SPREADING IS GROWING

More and more farmers want the convenience of a bulk spreading service. It saves them time, equipment and maintenance expense *plus*, up to \$4-\$8 per acre over bagged goods. Let us help you get started in business with "New Leader".

MAIL TODAY

HIGHWAY EQUIPMENT COMPANY

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ADDRESS.....

TOWN.....STATE.....

☐ Farmer ☐ Operator ☐ Student

Mail coupon for L-425 literature and a copy of "Your Land Is Different" a booklet designed to help you sell more bulk fertilizer.



of new service, sales and merchandising techniques.

Being progressively oriented to the adoption of such new ideas was found to be positively and significantly related to:

profit margin made on fertilizer, total gross profit made on fertilizer, and knowledge about fertilizer.

The more progressive dealers:

sell above average amounts of fertilizers;
offer more educational services such as fertilizer clinics, test plot demonstrations, and soil sampling programs;
offer more fertilizer spreading services;
believe the farmer wants them to be a consultant on fertilizer matters and think he (the dealer) should try to influence the farmer,
and offer less price discounting and credit services.

There was no significant relationship between progressive orientation and the dealer's total volume of business. From this it may be inferred that the total volume is not necessarily related to the tendency to adopt or reject new service programs. There seems to be no difference in the proportion of dealers in each size category who are willing to adopt these new ideas.

Many educational and industrial groups have long been recommending two basic educational services: soil testing programs and test plot demonstrations. From the above discussion on services in general it appears that these two educational services represent the areas of greatest discrepancy between farmer desires and actual availability from dealers and are among the services offered by the most progressively oriented dealers. These two services will now be briefly discussed.

Test Plot Demonstrations

The use of test plots and field demonstrations is a relatively untapped area of fertilizer education and sales promotion.

From the farmers' point of view—53% of the farmers knew about test plots and demonstration—of all kinds, not necessarily fertilizer test plots.

As far as farmers knowing about dealer sponsored demonstrations are concerned:

4% knew of test plots sponsored by a local dealer.

1% knew of test plots sponsored by the dealer and Iowa State University.

11% knew of test plots sponsored by commercial seed companies—almost completely seed corn companies.

18% of the farmers had attended a test plot demonstration of any kind during the past year.

Only 5% of the farmers had attended test plots or demonstrations during the past year where they recognized that fertilizer was a part of the test demonstration.

From dealer's point of view—15% of the dealers stated they sponsored test plots and demonstrations. An additional 3% thought they should be sponsoring test plots and demonstrations.

Though the number of dealers offering these services are small, the dealers sponsoring test plot demonstrations have the following characteristics:

Have above average profit margins—9.5, average is 9.3.

Have much above average total gross profit margins—\$5,500, average is \$3,700.

Have slightly above average total fertilizer sales—\$31,000, average is \$80,000.

To a greater extent thought their fertilizer business was excellent or had a much greater po-

tential (rather than poor, average, or a sideline).

Are less worried about fertilizer competition—saw it as weak.

Are also offering fertilizer clinics—highly significant relation.

Are also sending in soil samples and interpreting soil test results—highly significant relation.

Are helping their customers plan their fertilizer program—significant relation.

Think the farmer expected them to be a consultant on fertilizer matters—significant relation.

Are also calling on farmers to sell fertilizer—highly significant relation.

Have higher fertilizer knowledge. Tend NOT to offer volume or seasonal discounts and credit services.

There is NO significant relationship between offering test plots and demonstration service and the size of the business, total volume, and the

percent that fertilizer is of total volume of business.

If the test plot demonstration program is going to really lead to increased fertilizer use and fertilizer business, it must be set up and carried out properly. Two specific points from our Iowa statewide data may give additional insight into how to set up such a program successfully.

When farmers were asked who they would like to have sponsor test plot demonstrations, they gave the following answers:

| | |
|--|-----|
| College Experiment Station and experimental farms | 34% |
| County Extension Director | 24% |
| Local Dealer | 19% |
| Commercial company and/or dealer and County Extension Director | 10% |
| Commercial Company | 4% |
| Other | 5% |

When asked who they would least like to have sponsor a test demonstration the farmers stated:

| | |
|---------------------------|-----|
| Commercial Company | 55% |
| Local Dealer | 19% |
| County Extension Director | 9% |

When asked what kind of farm they would like to see the test demonstration on, the great majority (79%) stated on the farm of an average farmer rather than on the farm of a below average farmer (13%) or an outstanding farmer (5%).

Thus, it would appear that at the present time the most productive route open to fertilizer manufacturers and mixers working with dealers to reach the greatest number of farmers would be by working with local dealers to involve the college and county extension director directly or officially with setting up the test plot demonstrations.

Soil Test Programs

In our statewide farmer study it was found that 34% of the Iowa farmers had never had any soil samples tested. Of the 66% that had at some time had a soil sample tested only approximately one-fourth had



**Why you'll
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Grace
Urea
Prills
This Spring**

**Its versatility and superiority
help increase your volume and profits**

You can recommend Grace Urea Prills for all crops, wherever a nitrogen fertilizer is needed.

In the spring, for example, these free-flowing, leach-resistant prills are ideal for preplant application. That's because they speed decomposition of stubble or plant residues being turned under.

And, of course, your customers can use Grace Urea Prills profitably for:

- ✓ Sidedressing or topdressing
- ✓ Foliar application
- ✓ Application in irrigation water
- ✓ Spring fertilization of pastures

You help your customers as well as yourself when you promote the increased use of Grace Urea Prills. They offer your farmers 4½ pounds of nitrogen for each ten pounds applied—the most nitrogen per pound in solid form... **guaranteed 45%.**

To build up the nitrogen content in liquid fertilizers, use either Agricultural Grade Grace Crystal Urea or Grace Urea Prills. Both dissolve readily, stay dissolved.



Grace Chemical Company

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MEMPHIS, TENN.



submitted any soil samples more than twice in the last five years.

From the farmer point of view—As far as the farmer is concerned there are significant relationships between having his soil tested and:

Total dollars spent on fertilizer.
Total pounds of N-P-K used.
Pounds of N-P-K per acre of corn.

Those who soil test almost every year use fertilizer more intensively on corn.

Those who soil test every two or three years tend to spend the most on fertilizer.

From the dealer point of view—Those dealers who take soil samples for farmers, send in soil samples and help interpret soil test recommendations for farmers have the following characteristics:

Maintain a relatively high mark-up on fertilizer over purchase cost—10.7%, average 9.5%.

Have a relatively high gross profit margin on fertilizer—\$5,400, average \$3,700.

See the fertilizer business as "excellent" or a business with "great potential" (rather than poor, average or a sideline).

See their fertilizer department as a money maker in itself (rather than a customer service or not a money maker).

Are less worried about fertilizer competition—saw it as weak.

Think the farmer expects them to be a consultant on fertilizer matters and think they should influence the farmer's decisions regarding fertilizer use.

Help the farmer plan his fertilizer program.

Have relatively high fertilizer knowledge.

Tend to NOT offer volume discounts or credit.

Limited data are also available from one of our Iowa studies on the impact of a fertilizer manufacturer

sponsored soil test program on dealer business and farmer use of fertilizer. In all, 12 dealers and 38 farmer soil testers were interviewed in this limited sample.

As might be expected there was differential acceptance and satisfaction on the part of the dealer with the soil test program as promoted by the field salesman of the manufacturer. Two-thirds of the dealers accepted the soil test program to some minimum degree—took at least 20 soil samples. All of these dealers had carried on some type of soil testing previously. However, the total number of soil samples taken by dealers increased by 74% after taking on the soil test program.

The following were some of the reactions of dealers to the program:

Twenty-five percent thought the soil test program was "fairly effective," 50% "effective" and 25% "very effective."

All dealers thought the farmers

liked the promotional soil test program.

In their evaluation of the soil test program as a promotional device 50% stated it was "average," 25% "better than average" and 25% said it was "one of the best promotional devices."

Seventy-five percent of the dealers stated that the soil test programs increased their fertilizer sales. Average increased sales as a result of the program were estimated at slightly over 30%. Though total increase in sales cannot all be attributed to the soil test program actual sales volume did go up over 30%.

Fifty percent of the dealers thought the soil test program had increased the other business (other department) farmers did with them.

All dealers were going to continue the soil test program.

There was only an average satisfaction with the help the dealer received from the manufacturer salesman. The dealer evaluation of the help received from the manufacturer salesman varied from "very effective" to "very little help." The attitudes of the various manufacturer salesmen to the soil test program differed markedly. This points out the importance of a well thought out soil test program and the need for commitment of the sales force to carrying out such a program.

From the farmer's point of view the following facts can be noted. Twenty-one percent of those who had their soil tested as a result of this program had never had their soil tested before. An additional 42% had not had their soil tested the two previous years. Thus, in approximately 80% of the cases the program reached people that had at some time in the past had their soil tested.

Those who had had their soil tested as a result of the program were compared with a random sample of farmers in this same area on the basis of fertilizer use. It should be indicated that other people who soil tested could be in the random sample, thus this is not a comparison of soil testers and non soil testers, but of those who had their soil tested as a result of the program and a random sample of farmers. Those who had their soil tested were already using about twice as much fertilizer as were the random sample.

However, the year after the soil test the following changes took place:

The soil testers increased total tons of fertilizer by .86 of a ton, from an average of 3.06 to 4.82. The random sample used almost the same, 1.99 and 1.98 tons.

Intensity of use of N-P-K per acre of corn: The soil testers went from 39.38 lb. per acre to 47.05 lb. per acre, an increase of 7.67 lb. per acre. While the random sample went from 21.20 to 21.57 lb., an increase of .37 of a pound per acre.

The Challenge to the Fertilizer Industry

It is easy to blame the dealer and the farmer for below optimum fertilizer use and small volume fertilizer sales. Certainly, the fertilizer industry has a tremendous stake in this problem. Do they not have an opportunity and a responsibility?

The present picture as seen by the dealer—Slightly over half of the dealers said they were receiving no help from fertilizer manufacturers and distributors. Twenty-five percent said they were receiving some help on advertising. Ten percent were receiving some help on financing and 5% said they were receiving help on actual selling.

When dealers were asked how they thought the people from whom they purchased their fertilizer should help, they had the following suggestions:

26% think the suppliers should provide more help in keeping

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Of advantage to formulators with multi-plant locations is the fact that specifications for Espesol 5 are identical at all Eastern States terminals—no need for changes in your formulations. Available in drum, transport, tank car, barge and ship tank lots. Mail coupon for complete information.

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up-to-date on product changes and changes in fertilizer recommendations.

9% made specific suggestions for product improvement.

8% suggested price reduction or helping maintain dealer margins.

32% consider the present help adequate.

20% have no specific suggestions.

Though less than half had suggestions it may be noted that those suggestions offered were overwhelmingly of a basic product information and educational nature.

What kind and amount of help should the dealer expect from the industry? This is a basic decision that must be made.

Can the Dealer Be Reached?

When dealers were asked to rank the sources of information about fertilizer that were most useful, commercial sources were mentioned most frequently. Within this commercial group fertilizer salesmen ranked highest, followed by fertilizer company publications, fertilizer manufacturer representatives and fertilizer company clinics. The governmental educational services of the USDA, college and extension service, were a close second to the commercial sources. Good farmers in the community and farm magazines were other major sources mentioned. The commercial sources, then are perceived now as providing useful information on fertilizer.

Seventy-five per cent of the dealers say they get their ideas about new improved fertilizer sales techniques from commercial sources, mainly the fertilizer industry and its representatives. Seventy-five per cent want more information on new improved techniques. The preferred source for the additional information is the commercial source, followed by the college.

The attitude of receptivity seems to exist among many dealers. The industry appears to have a communication route to these dealers. However, if the dealer is to be motivated to push fertilizer it is going to take well planned and implemented programs backed up by financial and qualified human resources. The day of the price detective "order taker" salesman is passing out of the picture. The alternative may be the well trained specialist who can give expert advice on business and farm management and sales and educational programs as well as fertilizer and fertilizer use. What role will the fertilizer manufacturer play in this?

HOWELL

(Continued from page 1)

executive vice president and director, 1944-49, and president, 1949-1956.

When he completed his term as president of the Institute in 1956, the board of directors unanimously adopted a resolution recognizing the "... prominent leadership" he provided "in uniting the fertilizer industry under its one national trade association... and in resolving the many organizational problems encountered during the first year of operation."

The board further recognized "the forceful leadership and unflinching efforts of Mr. Howell during this period of organization and initial operations" and recognized that he "contributed substantially to the betterment of both the fertilizer industry and its trade association" and finally, they expressed "appreciation and commendation for the many services, contributions, and the outstanding leadership provided by Mr. Howell during his term as first president of the Institute."

ISSUES TOLERANCES

WASHINGTON—The National Agricultural Chemicals Assn. has issued official Food & Drug Administration tolerances in the February issue of its "News" publication.



Brash young clerk: "Since one of your vice presidents just died, do you think I could take his place?"

Boas: "It's all right with me if you can arrange it with the undertaker."

★

Sue: "I believe my husband is the most generous man in the world."

Lou: "How's that?"

Sue: "Well, I gave him a dozen of

the loveliest neckties for Christmas, and he took them right down and gave them to the Salvation Army."

★

Famous Last Words

"Take care of Miss Blue's permanent, willya Marge," said the beauty parlor operator, "I gotta give this henna rinse."

★

First Lawyer: "You're a low-down cheat!"

Second Lawyer: "You're an unmitigated liar!"

Judge (rapping): "Now that the attorneys have identified each other, we shall proceed with the case."

★

A young man was seated opposite a nice old lady in a Pullman car. For some time he sat vigorously chewing gum.

Finally the old lady leaned for-

ward and said: "It's so nice of you to try to make conversation, but I must tell you I am stone deaf."

★

Laundry sign: "We do not tear your laundry with machinery. We do it carefully by hand."

★

Signs of the times—On a rural gas station: "Buzz twice for night service. Then keep your shirt on while I get my pants on!"

★

Father was standing at the edge of a cliff admiring the sea below, the sandwiches clutched in his hand. His son approached him and tugged at his coat.

"Mother says it isn't safe here," said the boy, "and you're either to come away or else give me the sandwiches."

Match fertilizer markets with 24 SF State & Regional Editions

24 State & Regional Editions of Successful Farming

| Edition | States | Circulation* | B&W Pg. Rate |
|---------|---|--------------|-----------------|
| 1 | Iowa, Illinois, Indiana, Nebraska, Minnesota, Wisconsin | 608,297 | \$3,955 |
| 2 | Illinois, Indiana | 218,956 | \$1,860 |
| 3 | Iowa | 128,670 | \$1,160 |
| 4 | Minnesota | 116,748 | \$1,050 |
| 5 | Nebraska | 67,646 | \$ 625 |
| 6 | North Dakota, South Dakota | 82,225 | \$ 760 |
| 7 | Wisconsin | 76,277 | \$ 705 |
| 8 | Iowa, Illinois, Indiana | 347,626 | \$2,780 |
| 9 | Iowa, Minnesota | 245,418 | \$2,085 |
| 10 | Iowa, Nebraska | 196,316 | \$1,720 |
| 11 | Minnesota, Wisconsin | 193,025 | \$1,690 |
| 12 | Minnesota, North Dakota, South Dakota | 198,973 | \$1,740 |
| 13 | North Dakota, South Dakota, Nebraska | 149,871 | \$1,350 |
| 14 | Illinois, Indiana, Ohio | 320,412 | \$2,565 |
| 15 | Iowa, Minnesota, North Dakota, South Dakota, Nebraska | 395,289 | \$3,065 |
| 16 | Iowa, Illinois, Indiana, Wisconsin, Minnesota | 540,651 | \$3,785 |
| 17 | Illinois, Indiana, Ohio, Wisconsin, Michigan | 464,985 | \$3,370 |
| 18 | North Dakota, South Dakota, Nebraska, Kansas | 217,241 | \$1,850 |
| 19 | Iowa, Nebraska, Kansas, Missouri | 339,268 | \$2,715 |
| 20 | Middle Atlantic, New England | 138,385 | \$1,245 |
| 21 | Ohio | 101,456 | \$ 915 |
| 22 | Michigan | 68,296 | \$ 630 |
| 23 | Kansas | 67,370 | \$ 625 |
| 24 | Missouri | 75,582 | \$ 700 |

*A.B.C. Publisher's Statement, 12/31/58

*Fertilizer sellers have an effective sales tool
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of SUCCESSFUL FARMING or the
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It's easier to get maximum sales potential, increase volume, sell more users and prospects, with the flexible new SF editions! You can put more power and push in markets where extra effort is merited, profitably introduce new products, tailor your advertising to your marketing and merchandising program.

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SUCCESSFUL FARMING is your most potent fertilizer sales medium... reaching the nation's best farmers, with big farms that average 336 acres, and an estimated annual income from farming alone which averaged around \$10,000 for more than a decade, and in a recent year exceeded \$12,000.

Full facts, any SF office.



MEREDITH PUBLISHING COMPANY, Des Moines... with offices in
New York, Chicago, Atlanta, Boston, Cleveland, Detroit,
Los Angeles, Minneapolis, Philadelphia, St. Louis, and San Francisco.

PATENTS and TRADEMARKS

2,925,362

Bunte Salt-Sulfide Composition in Agricultural Sprays. Patent issued Feb. 16, 1960, to Edward M. Fettes, Morrisville, and Morris B. Berenbaum, Levittown, Pa., assignors to Thiokol Chemical Corp., Trenton, N.J. A solid, substantially dry composition adapted to be mixed with water to form a water dispersion of polysulfide polymer, said composition comprising at least one compound having the general formula $R(S_2O_2Na)_x$, wherein "R" is selected from the group consisting of oxahydrocarbon radicals and aliphatic hydrocarbon radicals having up to ten carbon atoms, and "x" is a positive integer from 1 to 4, at least a major proportion of the molecules of said compounds having at least two S_2O_2Na radicals attached to different carbon atoms thereof, and a reagent selected from the group consisting of alkaline monosulfides, polysulfides and sulfhydrates.

2,924,516

Herbicidal Compositions. Patent issued Feb. 9, 1960, to Francois D'Ogny, Paris, France, assignor to Pechiney Compagnie de Produits Chimiques et Electrometallurgiques. A herbicidal composition comprising a herbicidal amount of sodium chlorate and a synergistic amount of sodium fluoride. A process for the destruction of vegetation which comprises applying thereto a mixture of sodium chlorate and a synergistic amount of sodium

fluoride in an amount which destroys the vegetation.

2,924,553

Dimethyl 2,4-Dichlorobenzoylphosphonate. Patent issued Feb. 9, 1960 to Joseph W. Baker and George A. Saul, Nitro, W. Va., assignors to Monsanto Chemical Co., St. Louis. The method of destroying parasitic worm life in agricultural soils which comprises contacting the said organisms with a nematocidal composition comprising an effective concentration of O-O-dimethyl 2,4-dichlorobenzoylphosphonate.

2,923,634

Method of Controlling Undesirable Plant Growth. Patent issued Feb. 2, 1960, to Robert F. Lindemann, Painesville, Ohio, assignor to Diamond Alkali Co., Cleveland. The method of controlling undesirable plant growth which comprises contacting said plant growth with an active amount of dimethyl 2,3,5,6-tetrahaloterephthalate.

2,924,554

Method of Repelling Rodents with Furan Compounds. Patent issued Feb. 9, 1960 to Manlio A. Manzelli, Plainfield, N.J., and Virgil H. Young, Jr., and Charles L. Harowitz, Richmond, Va., assignors to Virginia-Carolina Chemical Corp., Richmond, Va. Process of protecting materials which are susceptible to attack by rodents which comprises protectively associating therewith a compound contain-

ing the furan nucleus selected from the group consisting of 2-chloroethyl 2-furoate; allyl 2-furoate; methyl 5-nitro-2-furoate; ethyl 5-nitro-2-furoate; propyl 5-nitro-2-furoate; 5-nitro-2-furaldehyde; 5-nitro-2-fural chloride; ethyl 5-nitro-2-furyl ketone; 5-nitrofurfuryl alcohol; 3-(5-nitrofurfurylidene-amino)-2-oxazolidone; 3-chloro-2-furoic acid; 2-furyl phenyl ketone; furfurylamine; 2-furfurylaminopyridine and furfural.

2,923,614

Triazine Derivatives. Patent issued Feb. 2, 1960, to Hans Gysin, Basel, and Enrico Knusli, Riehen, near Basel, Switzerland, assignors to J. R. Geigy A.-G., Basel, Switzerland. A composition for inhibiting the growth of plants, consisting essentially of 2-bromo-4,6-bis-ethylamino-s-triazine in a concentration sufficient to inhibit plant growth, and an agricultural adjuvant as carrier therefor.

2,923,655

Fungicidal Cuprous Oxide Compositions. Patent issued Feb. 2, 1960, to Anatole Vesterman, Lyon, France, assignor to U.C.L.A.F., Paris, France. A suspension of yellow cuprous oxide in finely divided form of particles 0.1 to 1.0 micron in size in an emulsion of water in a mineral oil, said suspension containing between about 38% to about 43% of copper in the form of yellow cuprous oxide, about 25% to 33% of a neutral mineral oil harmless to plants, about 1.5% and about 3.0% of a surface active condensation product of ethylene oxide with an alkyl phenol, about 1.5% to about 3.0% of sodium hexametaphosphate, and about 18% and about 25% of water.

2,923,658

Fungicidal Compositions and Methods Employing p-Chloro- α -Thiocyanato Acetyl Benzene. Patent issued Feb. 2, 1960, to Erik Regel, Köln-Klettenberg, Richard Wegler, Leverkusen, and Ferdinand Grewe, Köln-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany. A method of combating fungi which comprises treating infested plants or plants to be protected with p-chloro- α -thiocyanato-acetyl benzene.

2,923,659

Pesticidal Composition. Patent issued Feb. 2, 1960, to George E. Ziegler and Lavern Paul Fotsch, Evanston, Ill., assignors to Zonolite Co., Chicago. A method of producing an insecticidal product which comprises disposing within the interstitial spaces of 100 parts, by weight, of unexfoliated vermiculite, an emulsion comprising by weight, about 4 parts of water, about 2 parts of malathion, about 2 parts of peanut oil, and an emulsifier.

Industry Trade Marks

The following trade marks were published in the Official Gazette of the U.S. Patent Office in compliance with section 12 (a) of the Trademark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. (See Rules 20.1 to 20.5.) As provided by Section 31 of the act, a fee of \$25 must accompany each notice of opposition.

Instant-Kill. In capital letters, for insecticide. Filed Jan. 9, 1959, by D&A Co., Inc., Bridgeport, Conn. First use Dec. 1, 1953.

S-847. In capital letters, for herbicide. Filed Jan. 19, 1959, by Spencer Chemical Co., Kansas City, Mo. First use May 15, 1958.

Aqua-Kleer. In hand-drawn letters, for chemical preparations useful in exterminating weeds. Filed June 22, 1959, by Amchem Products, Inc., Ambler, Pa. First use June 1, 1959.

Amchem. In hand-drawn letters, for herbicides and other uses. Filed June 26, 1959, by Amchem Products, Inc., Ambler, Pa. First use May 21, 1958.

Agoxide. In capital letters, for fertilizers. Filed Sept. 11, 1959, by Basic, Inc., Cleveland, Ohio. First use May 4, 1959.

K-Plus. In capital letters, for sul-

fate of potash for use as a fertilizer ingredient. Filed May 23, 1958, by International Minerals & Chemical Corp., Chicago, Ill. First use April 14, 1958.

Pet Heaven. In capital letters, for repellent for fleas and ticks on cats and dogs. Filed Jan. 19, 1959, by Aids, Inc., Palm Beach, Fla. First use Feb. 3, 1958.

Maranil. In capital letters, for chemical product for use as a wetting agent in the manufacture of insecticides, fungicides, paper and other products. Filed March 4, 1959, by Dehydtag Deutsche Hydrierwerke GmbH, Düsseldorf, Germany, owner of German Reg. No. 616,162, dated Jan. 31, 1952.

Turface. In capital letters, for mineral soil supplement and soil conditioner. Filed July 13, 1959, by Wyandotte Chemicals Corp., Wyandotte, Mich. First use April 14, 1959.

Simonsen Mfg. Co. Adds To Sales-Service Force

QUIMBY, IOWA—Merle W. Simonsen, manager of the Simonsen Mfg. Co., Quimby, Iowa, has announced the appointment of



James Morgan

James Morgan as sales-service representative. Mr. Morgan will service the complete line of Simonsen bulk feed bodies and Simonsen bulk fertilizer spreaders in four Midwestern states.

Mr. Morgan has been with the company for four years, and he has worked extensively in the research engineering and development programs prior to accepting his new position. His territory will be southern Iowa, Missouri, Kansas, and Nebraska. For the present he will operate out of Quimby, Iowa.

Dealers-Salesmen Meet

BATESBURG, S.C.—A three county fertilizer dealers-salesmen meeting was held Feb. 5 in Batesburg.

The meeting was initiated largely through the efforts of O. W. Lloyd, M. A. Bauknight and W. H. Craven, county agents of Edgefield, Lexington and Saluda counties, respectively.

Feeling that the fertilizer industry could help itself by helping to push the soil fertility and soil testing drive in these counties, these agents got together with the fertilizer dealers and agreed to put on a short course for dealers operating in the three county area. They felt that perhaps dealers could benefit from more information about the importance of a sound soil fertility program to the agricultural economy of the area they serve.

BARK(ING?) PEST

SALEM, ORE.—Dogwood borer has been found in Oregon for the first time, coming in on shipments of nursery stock from Tennessee and Alabama.

The trees on which it hitch-hiked a ride into Oregon are being treated or destroyed under supervision of the state nursery inspectors. Also, immediate steps are being taken to prevent spread to the state's established dogwood trees.

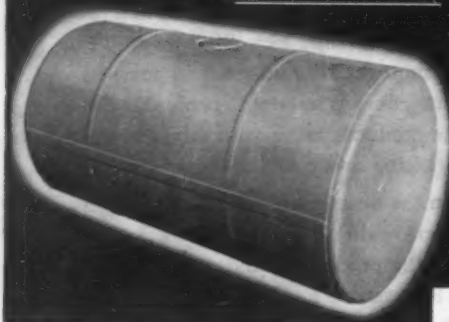
The borer, a clearwinged moth, damages by girdling the plant at the base.

Larvae appear on the bark in the spring, often near an injury. By late May, the adults emerge and continue to appear throughout the summer. The borer is a one-generation annual pest.

Simplest control measure used in Ohio has been to wrap the main stems of transplanted trees. A DDT spray is also successful under Ohio conditions.

New 200-gallon MOLDED FIBER GLASS tank won't rust or corrode...

ideal for use as *spray tank...



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Much less expensive than stainless steel, this tough, long-lasting MOLDED FIBER GLASS tank is unaffected by many chemicals (including most insecticides and liquid fertilizers)... completely rust-proof and weather-resistant... will outlast metal tanks many times over. Because it is molded under heat and high pressure in matched metal dies, the new MOLDED FIBER GLASS tank is exceptionally strong and resistant to impacts... will withstand hard usage. It is lightweight, easy to handle, easy to clean.

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PORTABLE WATER SUPPLY



ALABAMA

(Continued from page 1)



AT ALABAMA CONFERENCE—More than 200 attended the Alabama Pest Control Conference held at Auburn University Feb. 17-18. Above are participants in the program. Top photo, left to right: Dr. Charles F. Simmons, associate dean and assistant director of the Auburn School of Agriculture and Agricultural Experiment Station; Dr. E. T. York, Auburn Extension director; and G. J. Haeussler, assistant director, Entomology Research Division, U.S. Department of Agriculture, Beltsville, Md., all of whom appeared on the program.

Second photo: Dr. E. V. Smith, dean and director of the Auburn School of Agriculture and Agricultural Experiment Station; Josh Freeman, nurseryman of West Point, Ga.; Lynwood Jenkins, West Point nurseryman; and V. S. Searcy, assistant agronomist of the Alabama Agricultural Experiment Station.

Third photo: B. P. Livingston, State Department of Agriculture, Montgomery; Dr. F. S. Arant, zoology-entomology department head, Auburn Agricultural Experiment Station; Bill Padgett, Alabama Division of Forestry, Montgomery.

In the lower photo are the new officers elected at the meeting: Dr. Urban L. Diener, associate plant pathologist, Auburn Agricultural Experiment Station, president; R. J. Smith, American Cyanamid Co., Montgomery, vice president; G. A. Orum, State Department of Agriculture, Montgomery, director; and Dr. W. G. Eden, entomologist of the Auburn Station, retiring president.

use of these chemicals can produce returns amounting to several times their cost.

The directors of the Auburn extension service and experiment station joined Dr. Haeussler in praising work of the pesticide industry and in calling for close cooperation between all those engaged in pest control work to ensure safe and profitable use of pesticides.

Dr. E. T. York, Jr., extension director, pointed out that productivity of the average American farmer has increased about two and one-half times in the past 20 years, and little of this increase could have been realized without use of chemicals. He contrasted productivity in this country with that in under-developed nations where pesticides are in limited use. He said these under-developed countries use chemicals mainly for disease prevention and not in food production. This has resulted in an increasing population without the needed increase in food production.

A call for "the utmost responsibility and cooperation by every one concerned with pest control problems" was sounded by Dr. E. V. Smith, experiment station director and dean of the Auburn school of agriculture. He said it is more important than ever before to use pesticides according to labeled tolerances and other scientific recommendations.

With the support of public opinion, Dr. Smith said, the U.S. Health, Education, and Welfare Department may ban the use of certain pesticides on the basis of their effects on laboratory animals. However, he predicted that a more substantial basis will be required in the future.

Importance of weed control was stressed by V. S. Searcy, station assistant agronomist. He said it is one of the most important management practices in crop production and maintenance of lawns, parks, recreational areas, industrial sites, utility rights-of-way, and highways. Too often no thought is given to controlling weeds until they are seen, he continued, and then it is often too late.

Increased use of sprayers to apply pesticides has created problems for Alabama farmers, Dr. G. H. Blake, Jr., associate entomologist, and T. E. Corley, associate agricultural engineer, told the group. Although spray application generally gives best results, mixing pesticides in proper dilution and calibrating sprayers to apply the correct amount can be a problem for those not familiar with the operations.

One session of the conference was concerned with the fight against household insects and pests of lawns and ornamental plants. W. H. Grimes, extension survey entomologist, said cockroaches are the most important household pest in homes that have been invaded.

F. E. Guyton, professor of zoology-entomology, said house sanitation is important in controlling clothes moths. For chemical control, he suggested spraying insecticides on shelves, walls, woolen clothes, blankets, furs, and carpets.

House flies are resistant to chlorinated hydrocarbons and resistance to phosphates has been reported in some areas, according to the report by Dr. Kirby L. Hays, assistant

entomologist. He said residual sprays have given good results in Alabama tests and that adding sugar or honey to the mixture attracts flies and prolongs effectiveness. Use of poison baits is also highly effective, he said, as are cotton strings treated with insecticides and strung across rooms infested with flies.

A combination of measures is necessary for good rat and mouse control, explained Earl F. Kennamer, extension fish and wildlife specialist. He recommended use of anticoagulant poisons, ratproofing buildings, and keeping foodstuffs protected from rodents. Although moles can be controlled by trapping, he revealed, the most effective control method is to use an insecticide to destroy insects and worms that moles feed on.

Lacy Hyche, assistant entomologist, emphasized importance of a thorough job of applying insecticides, beginning at first sign of attack, for good control of insects attacking ornamental plants. Keeping plants healthy is a good preventive measure, since unhealthy plants are more susceptible to attack, he said.

Disease control is necessary for producing and maintaining good quality ornamental plants and several steps are necessary for a good control program. Dr. Raymond L. Self, plant pathologist of the station's ornamental horticulture field station at Spring Hill, said seed treating, spraying or dusting with fungicides, selecting disease-free stock, soil sterilization, controlled watering, and protection of an area from recontamination are necessary parts of a disease control program.

Need for good public relations in the pesticide industry was brought out in an address by Jack Dreessen, herbicide specialist of the National Agricultural Chemicals Assn., Washington, D.C. He pointed out that an increasing portion of the American public is becoming unduly fearful of use of pest control chemicals. Adverse and unfounded criticisms of scientific research in this field and wide distribution of such misinformation are leaving their mark, he declared. Mr. Dreessen said he is certain that a great majority of the public will accept pesticides as an

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important contribution to present day living if the true facts are presented in understandable language.

The tight cost-price squeeze facing farmers in 1960 means that competition will be keen and the use of good farm practices will be more important than ever. Foy Helms, extension economist, told the group. He said 1960 conditions for farmers are discouraging because of increasing costs of goods they buy and lower prices for many crops they produce.

The closing program featured discussions on latest information about controlling weeds, diseases, and insects of cotton. In explaining use of herbicides that will control annual weeds in cotton early and after lay-by, V. S. Searcy, assistant agronomist, cautioned farmers to take the necessary time to learn how to apply and to be sure the right amounts are used.

Dr. F. S. Arant, zoology-entomology department head, said cotton insects are increasing in importance because boll weevils have developed resistance in some areas and seem better adapted to living in northern Alabama. He said it is doubly important that the right insecticide be applied at the right time for maximum benefit. For growers who got control in 1959 with chlorinated hydrocarbon insecticides, Dr. Arant suggested using the same materials this year. If resistance is suspected, he said, the amount should be doubled for two applications.

Preventing damage from cotton diseases requires advance information and planning, explained Dr. A. L. Smith, USDA cooperative pathologist. Once a disease is in a field it is too late to look for a control measure. He said methods of disease control are in two categories, (1) breeding for resistance, and (2) control by cultural practices, chemicals, or other methods.

The two-day conference was sponsored by the Alabama Association for Control of Economic Pests in cooperation with the School of Agriculture, Agricultural Experiment Station, and extension service of Auburn University.

OFFICERS NAMED

AUBURN, ALA.—New officers of the Alabama Association for Control of Economic Pests were elected during their annual meeting held in conjunction with the Alabama Pest Control Conference.

Those elected were: Dr. U. L. Diener, associate plant pathologist of the Auburn Agricultural Experiment Station, president; R. J. Smith, American Cyanamid Co., Montgomery, vice president; Dr. J. W. Eason, Auburn assistant entomologist, secretary-treasurer; and Mrs. Earlean McLendon, Earlean's Nursery of Birmingham, G. A. Orum, State Department of Agriculture, Montgomery, and Hugh Wheelers, Dothan Aviation Co., Dothan, directors. The association membership numbers 800 from the pesticide industry, pest control operators, and research and extension workers.

1959 EARNINGS REPORTED

SAINT LOUIS, MICH.—The 1959 earnings reported by Michigan Chemical Corp. were slightly ahead of previous year, despite the burden of start-up costs at the company's new seawater magnesium plant in Port St. Joe, Fla. Michigan's net income of \$401,200 represented earnings of 54¢ a share of common stock, as compared with \$368,443 and 51¢ a share in the previous year. Start up costs in 1959 were equivalent to 14¢ a share. Sales of \$8,642,106 for the year reflected sizeable gains in the company's basic product lines, but were under 1958's \$9,304,630 because of elimination of former unprofitable DDT business and curtailed government purchases of rare earths.

GRASS ROOTS

(Continued from page 1)

reaction when Congressional committees expose fragmentary testimony regarding alleged short-comings of government agencies. This is particularly true regarding such explosions that might be designed to attain maximum publicity value for the exponents of such theories.

There is little hope that relief can be attained through the Congressional committees since they are beyond comprehensive examination or testimony. These committees reach for and seek maximum publicity values and then stop.

One of the most recent examples is that of the Symington committee which came forth with a mouse-bite of testimony regarding exorbitant profits of the grain storage industry, disclosing total profits which read like a king's ransom as far as normal industry profits are concerned.

Likewise the secretary of Health, Education and Welfare, Arthur S. Flemming who appears to have assumed the direction of FDA and who peculiarly devised a timing of condemnation of a small part of the cranberry crop—at the holiday season which is said to have wrought severe financial damage to the entire cranberry industry—although for the major part that industry was not involved in the charges which Mr. Flemming submitted.

Likewise Mr. Flemming also stepped into the chemical industry field to disavow a previous approved chemical compound in the production of poultry and because of his advance publicity was able to compel officials at USDA to agree to his proposals to withhold such implanted poultry from the market.

These types of hearings all make hot publicity. All they need is one big break—as for example headlines featuring—"157% profit"—"cranberries contain carcinogens"—and the general press is off on a sleigh ride.

Food page editors-political reporters and others rise to the occasion and subsequent hearings bring in an attendance which crowd hearing rooms to a point where oxygen is at a premium.

A substantial part of this audience reflects over-stimulated public attention from various consumer and civic groups as well as miscellaneous others who grasp at headline values and are ready to applaud committee investigators who are out to show the validity of their allegations.

Fancy the chance of an agency official to sustain a defensive point against a backdrop of an antagonistic audience and a committee which may at any given point cut off the hearing and let the testimony stand on unfavorable connotations—conven-

ient adjournments which halt the normal development of testimony subject to later resumption when the public will have forgotten that there was never any opportunity for rebuttal.

The purpose of this report is to suggest a back-fire against the activities of these Congressional committees.

It is high time that the chemical industry and other trades involved should intervene—not at Congressional committee levels, but to take their cases to these public groups—the LWV, the PTA, the consumer groups and similar civic organizations.

These groups, largely influenced by women, are ready objects of sensational newspaper publicity. "Cranberries Contain Carcinogens"—"Pesticide Residues Contaminate the Food You Eat"—"Feed Ingredients Contain Cancer-Producing Materials" are headlines all too commonly seen.

The industries involved must take the initiative to various women's organizations and send spokesmen to the PTA, LWV and similar associations to tell the full story of what has been done and is now being done to make food available for the families and the children of these women at low price levels. These foods have sustained a health record which defies the attack of transient politicians.

The chemical industry and the food processing industry have attained a unique level of wholesomeness in food available to the U.S. public. The chemical industry has enabled citrus fruits, green leafy vegetables and all other fresh produce to be available throughout the year at prices which families can afford.

This reporter remembers well of going to the corner grocery to get citrus fruits at a then-going price of \$1.25 a dozen for oranges. It was about the only time in the winter months when such fruits were available but then only at exorbitant prices if translated into today's dollar values.

It appears to this reporter that these industries jointly or separately must take their case to these groups mentioned above to show that the hazards publicized by FDA and other government agencies are merely potential hazards. It should be shown that the net result of the use of economic poisons or growth-promoting compounds have resulted in a less expensive diet for their children and families and a declining death rate among infants. Better diets and the maintenance of life in older age groups are also a fact through the availability of foods which two score

years ago were not to be found except on the tables of wealthy citizens.

There is a story to be told. Not necessarily on the defense but one of substance to offset the extravagant publicity which now emanates from Congressional committees.

In other words, now is the time to take the case of these industries to the groups who seem to be most susceptible to the infection of sensational publicity.

It is a big job. It is a big problem for all the industries and it cannot be done by wringing the hands or weeping over injustice. Let Congress and other groups have their say. Now is the time to take the true gospel to the very groups who are providing encouragement to the Congressional sooth-sayers.

\$1 Million Slated For Mosquito Fight

WILMINGTON, DEL.—An estimated \$1,000,000 to be spent in the tri-state Delaware Valley area this year in the fight against mosquitoes would become more effective if the states banded together in a coordinated effort, it was contended by Maj. Russell W. Gies, chairman of the technical advisory committee on mosquito control of the Delaware Valley Committee, at a recent meeting here.

Representatives from scientific, governmental and civic agencies of New Jersey, Pennsylvania and Delaware attended the session which was designed to spur interest in a united tri-state front on mosquito control, with particular emphasis on the encephalitis carrier.

The joint effort is necessary, Maj. Gies said, since mosquitoes identified as those carrying "sleeping sickness" have a travel range of between five and six miles.

Maj. Gies stated that scientists of Rutgers University pinpointed the encephalitis outbreak last year to the highway paralleling the Atlantic Coast and about three to five miles inland from the resort areas.

An outbreak this year, according to the Rutgers men, would sweep westward to the Delaware River, Maj. Gies asserted. However, it has been determined that such an epidemic of the disease is dependent on two factors that existed side by side in 1959, he added.

One is extraordinarily hot, wet weather and the other is a high population of wild birds from which the mosquitoes transmit the disease to humans, Maj. Gies explained.

PURCHASE FIRM

LOUISVILLE, KY.—Kentucky Seed Company, Louisville, 1301 S. 12th St., has purchased Somerset Seed Service, Somerset, Ky.

State Agronomists' Suggested Minimum Fertilizer Grade Needs of the Middle West For the Year Beginning July 1, 1960*

| Ratio | Illinois | Indiana | Iowa | Kansas | Kentucky | Michigan | Minnesota | Missouri | Nebraska | N. Dak. | Ohio | S. Dak. | Wisconsin |
|-------|----------|----------|----------|----------|----------|----------|-----------|----------|----------|----------|----------|----------|-----------|
| 0:1:3 | 0-10-30 | 0-10-30 | | | | 0-10-30 | 0-10-30 | 0-10-30 | | | 0-10-30 | | 0-10-30 |
| 0:1:2 | 0-10-20 | 0-10-20 | 0-15-30 | | 0-10-20 | 0-10-20 | 0-10-20 | 0-20-30 | | | | | |
| 0:1:1 | 0-20-20 | 0-20-20 | 0-20-20 | 0-20-20 | 0-20-20 | 0-20-20 | 0-20-20 | 0-20-20 | | | | | 0-20-20 |
| 0:2:1 | 0-20-10 | 0-20-10 | 0-20-10 | | | 0-20-10 | 0-20-10 | | | 0-20-10 | 0-20-10 | | 0-20-10 |
| 1:4:1 | | | | | | 4-24-12 | 4-24-12 | 4-24-12 | | 4-24-12 | | | 4-24-12 |
| 1:4:4 | 4-16-16 | 5-20-20 | 5-20-20 | 5-20-20 | 4-16-16 | 4-16-16 | 5-20-20 | | 5-20-20 | | 4-16-16 | | 5-20-20 |
| 1:4:2 | 4-24-12 | 4-24-12 | 5-20-10 | | | 5-20-10 | 4-24-12 | | 5-20-10 | | 4-16-8 | 4-24-12 | 5-20-20 |
| 1:3:2 | 3-9-27 | 3-9-27 | | | | 3-9-27 | | 3-9-27 | | | | | 3-9-27 |
| 1:3:1 | | | | 0-24-8 | 4-12-8 | 0-24-8 | | 0-24-8 | | | | | |
| 1:2:4 | | | 4-12-24 | | | 5-10-20 | 5-10-20 | | | | | | |
| 1:2:3 | | 5-10-15 | | | 5-10-15 | | | | | | 5-10-15 | | |
| 1:2:2 | | 8-16-16 | 8-16-16 | | 5-10-10 | 8-16-16 | 8-16-16 | 8-16-16 | | | 8-16-16 | | 8-16-16 |
| 1:2:1 | | | 10-20-10 | 10-20-10 | | 10-20-10 | 10-20-10 | 12-24-12 | 10-20-10 | 10-20-10 | | 10-20-10 | 8-16-16 |
| 1:1:2 | | | | | 4-8-18 | | | | | | | | |
| 1:1:1 | 10-10-10 | 12-12-12 | 12-12-12 | 12-12-12 | 10-10-10 | 10-10-10 | 12-12-12 | 10-10-10 | | 10-10-10 | 10-10-10 | | 10-10-10 |
| 1:0:0 | | 5-40-0 | | | | | | | | | | | |
| 1:4:0 | 8-32-0 | 8-32-0 | 8-32-0 | 8-32-0 | | 8-32-0 | 8-32-0 | 8-32-0 | 8-32-0 | 8-32-0 | 8-32-0 | 8-32-0 | 8-32-0 |
| 1:2:0 | 10-20-0 | | 10-20-0 | 10-20-0 | | 10-20-0 | 10-20-0 | 10-20-0 | 10-20-0 | 10-20-0 | 10-20-0 | 10-20-0 | 10-20-0 |
| 1:1:0 | 15-15-0 | | 15-15-0 | 15-15-0 | | 15-15-0 | 15-15-0 | 15-15-0 | 15-15-0 | 15-15-0 | 15-15-0 | 15-15-0 | 15-15-0 |
| 2:1:2 | | | | | 20-10-30 | | | | | | | | |
| 2:1:1 | 20-10-10 | 16-8-8 | 20-10-10 | | | 12-6-6 | 16-8-8 | | | | 14-7-7 | | 16-8-8 |
| 2:2:1 | | | | | 13-39-0 | 8-24-0 | | | | | 12-12-6 | | 12-12-6 |
| 1:3:0 | | | | | | | | 8-24-0 | 8-24-0 | | 13-39-0 | | 13-39-0 |
| 1:2:4 | | | | | | 5-10-30 | 5-10-30 | | | | | | 5-10-30 |
| 2:1:0 | | 16-4-8 | 24-12-0 | | | | 24-12-0 | | | 24-12-0 | | 24-12-0 | |
| 4:1:2 | | | | | | | | | | | | | |
| 3:2:1 | | | | | | | | | | | 15-10-5 | | |
| 2:7:1 | | | | | | | | | | | | | 10-35-5 |
| 2:0:1 | | 24-0-12 | | | | 24-0-12 | | | | | | | |
| 1:0:1 | | 15-0-15 | | | | | | | | | | | |

*The production of higher grades of the suggested ratios is encouraged. Solutions of similar ratios are equally acceptable. Following changes in grades and ratios have been suggested for future consideration: 0-1:3 (0-10-30) to 0-1:4 (0-10-40); 1:3:9 (3-9-27) to 1:2:4 (5-10-30) or 1:2:8 (4-8-32). [Presented at the joint meeting of Midwest Agronomists and Fertilizer Industry, Feb. 12, Chicago.]



Robert E. Ashcraft

W. Mercer Rowe

O. Ray Yates

Ashcraft-Wilkinson Co. Elects Three Executives

ATLANTA — Robert E. Ashcraft has been elected president of Ashcraft-Wilkinson Co. to succeed the late Trenton Tunnell. It has been announced by George W. McCarty, chairman of the board.

Simultaneously, W. Mercer Rowe, Jr., a vice president of the company since 1954, was named executive vice president. O. Ray Yates, manager of the company's Norfolk, Va., branch has been made a vice president.

Mr. Ashcraft became executive vice president of the company late in 1959. He joined Ashcraft-Wilkinson Co. following his graduation from the University of Alabama in 1929, subsequently served as branch manager of the Wilmington, N.C., and Norfolk, Va., offices and returned to Atlanta in 1955 as regional sales manager.

Mr. Rowe joined Ashcraft-Wilkinson Co. in 1947 as vice president and general manager of a subsidiary, Flag Sulphur & Chemical Co., Tampa, Fla. He was made an assistant vice president of the parent company in 1953, and a vice president and member of the board of directors in 1954.

A native of Harrellsville, N.C., Mr. Rowe attended Wake Forest College. He previously served as assistant

manager of the agricultural chemicals division of Penn Salt Manufacturing Co. and was a vice president and director of the Florida Agricultural Research Institute.

Mr. Yates joined Ashcraft-Wilkinson Co. as a sales representative at the Norfolk, Va., branch in 1948. He was made assistant manager of the branch in 1950 and succeeded Mr. Ashcraft as branch manager in 1955.

Born in Suffolk, Va., Mr. Yates attended the University of Virginia and the University of Alabama, graduating with a B.S. degree in 1944. He joined Ashcraft-Wilkinson after three years service with the U.S. Navy.

Ashcraft-Wilkinson Co. serves as exclusive world-wide sales agent for Duval-Sulphur & Potash Co., Escomb Chemical Corp., and also handles chemicals for agriculture and industry.

Insect Control Day

TUPELO, MISS.—More than 400 attended the Field Crop and Insect Control Day program held at the Fairgrounds' Community Center in Tupelo recently. Neil Wiseman, president of the Lee County Farm Bureau, presided. W. R. Thompson, extension agronomist at Mississippi State University, discussed pastures and chemical weed control; T. M. Waller, extension agronomist in cotton, explained grass control procedures; A. G. Bennett, extension entomologist, discussed insect control in crops and livestock.

On the afternoon program were Kelton Anderson, assistant extension entomologist, covering corn, soybean and chemical weed control; and John L. McVey, extension agricultural engineer, explained application and equipment for control using both home-made and manufactured devices.

FIRE ANT PROGRESS

BAINBRIDGE, GA.—The program to destroy the fire ant in Georgia is making good progress here.

Only 400,000 or 500,000 acres are infested in Georgia, and most of this is in Decatur County, where U.S. Department of Agriculture entomologists are at work now.

The original eradication program called for use of 3 lb. of active heptachlor per acre, but in recent months this program has been changed so that 1/4 lb. of active heptachlor is used per acre with the applications being repeated a couple of times at three-month intervals. The latter program is eliminating the ants effectively, and is less dangerous to wildlife, USDA said.

Dr. James H. Jenkins, associate professor of wildlife management at the University of Georgia School of Forestry, said the fire ant control program is about half finished in Georgia. He said that while there have been some losses to wildlife, they have been small. He believes that the new method of controlling the ants (which uses a smaller dosage of insecticides in several applications rather than one fairly large dose) may virtually eliminate wildlife losses without reducing the effectiveness of the program.

Olin Mathieson and Pennsalt Form New Joint Subsidiary

NEW YORK—Penn-Olin Chemical Co. is now being formed as a joint subsidiary of Pennsalt Chemicals Corp. and Olin Mathieson Chemical Corp. It was announced Feb. 15 by William P. Drake, president of Pennsalt, and Stanley de J. Osborne, president of Olin Mathieson.

The subsidiary, a \$6,500,000 venture, has been organized to produce sodium chlorate and other chlorate compounds, and will be owned equally by the two corporations. Preliminary engineering has been completed, and construction is expected to start within 90 days on a 25,000-ton-a-year plant at Calvert City, Ky.

Pennsalt has produced sodium and potassium chlorate for many years at Portland, Ore. Recently it also built an ammonium perchlorate plant at the same location. The latter is used in the manufacture of defoliant and weed killers.

Farmers Cotton Oil Names New Representative

WILSON, N.C.—Farmers Cotton Oil Co.-Fertilizer Division, Wilson, has named Philip L. Beaman as farm



Philip L. Beaman

service representative. Mr. Beaman will work closely with farmers on soil and fertilizer problems. He is a native of Walstonburg, N.C., a graduate of North Carolina State College. Prior to joining Farmers Cotton Oil Co. he taught agriculture in Warrenton, N.C.

Amchem Appoints European Supervisor

AMBLER, PA.—John R. Sterry, for the past 3 1/2 years a technical service representative in the international division of Amchem Products, Inc., Ambler, has been advanced to technical service supervisor for Europe. He will reside permanently in Zurich, Switzerland.

This post was brought about by the growth of Amchem's agricultural chemicals business in Europe, where the company has 37 licensees and representatives for these products.

While this is a new position for Mr. Sterry, the work which he will do is similar to what he has been engaged in on a worldwide basis since joining Amchem in 1956. His duties will be largely in the area of on-the-spot agricultural chemicals research and development where he will be consulting and cooperating with independent researchers as well as with Amchem's European associates.

St. Regis Appointment

LOS ANGELES—St. Regis Paper Co. announced the appointment of John Todd as sales manager in the Los Angeles district of its bag division. Mr. Todd succeeds G. E. Dickinson, who has been transferred to the St. Regis kraft division at Tacoma, Wash.

Warren M. Gannon, sales manager of the western area of the bag division, has moved from the company's sales office in Los Angeles, to 235 Montgomery St., Room 1450, San Francisco 4, Cal.

Sheep Sorrel Control Aided by Fertilization, USDA Scientist Says

WASHINGTON—Sheep sorrel, a serious lawn and turf weed throughout the Northeast and Midwest during the warm months, can be reduced by proper lime and fertilizer application to stimulate turf growth, according to a U.S. Department of Agriculture scientist.

A dense healthy turf is a good defense against sheep sorrel and other weeds, Dr. Felix V. Juska, research agronomist at USDA's agricultural research center, Beltsville, Md., told the third biennial meeting of the Weed Society of America Feb. 23 in Denver, Colo. Proper use of herbicides is also essential to good turf, he said.

Working with a thin turf of common Kentucky bluegrass and red fescue heavily infested with sheep sorrel, Dr. Juska found that application of 138 lb. of lime per 1,000 sq. ft. (6,000 lb. per acre) and fertilizer in the spring and fall of each year drastically reduced the sorrel because the resulting dense turf crowded out the weed. Sheep sorrel will not compete with desirable grasses in soils of high fertility and low acidity.

The pH (measurement of acidity) of test plots was raised from 4.5 to 6.2 by the addition of lime, making important soil elements available to the grass. A complete fertilizer was used in the experiments.

Sheep sorrel, often called red sorrel, grows from 6 to 15 in. high and has a slender stem with green or red flowers in clusters 2 to 10 in. long. It propagates itself by seed and creeping rootstock. It is often difficult to control with herbicides alone.

Good management is a prerequisite for any weed control program, according to Dr. Juska, but chemical weed control may be desirable to supplement management practices.

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Croplife

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Midwestern states.



Croplife's Home Office

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CROPLIFE is a controlled circulation journal published weekly. Weekly distribution of each issue is made to the fertilizer manufacturers, pesticide formulators and basic chemical manufacturers. In addition, the dealer-distributor-farm adviser segment of the agricultural chemical industry is covered on a regional (crop area) basis with a mailing schedule which covers consecutively, one each week, three geographic regions (South, Midwest and West) of the U.S. On the fourth week, production personnel in fertilizer manufacturing and pesticide formulating plants throughout the U.S. are covered in depth. To those not eligible for this controlled distribution, Croplife's subscription rate is \$5 for one year (\$6 a year outside the U.S.). Single copy price 25¢.

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Continued Forward Progress Assured Under New National Plant Food Institute Setup

CHANGES IN THE top echelons of the National Plant Food Institute mark the first major shift in setup since the old National Fertilizer Assn. and the American Plant Food Council consolidated in 1955. The latest move, placing Paul T. Truitt at the head of the Institute was made following the resignation of Dr. Russell Coleman who becomes president of the Sulphur Institute, a newly formed organization.

The best wishes of the entire plant food industry are extended to both of these talented gentlemen in their assumption of new responsibilities. Both previously bore the title of executive vice president of the National Plant Food Institute, and each has made an enviable record with the Institute. Both Mr. Truitt and Dr. Coleman are widely known throughout the country and each has contributed broadly to the welfare of agriculture in general and the fertilizer industry in particular.

Dr. Coleman will be able to continue much of his technical work in his new position with the Sulphur Institute, utilizing the information and training gathered through many years of association with the industry and research organizations. Before becoming president of the National Fertilizer Assn. he had served as director of the Mississippi Agricultural Experiment Station.

In performing his new responsibilities as head of the NPFI, Mr. Truitt will benefit from his rich background of experience as an administrator, gained through successful endeavors in the fields of agriculture, business and government.

Born and reared on a Missouri dairy farm and later having operated a large diversified farm enterprise in Maryland, he is well acquainted with farm problems. In addition to his practical experience, he also studied agriculture at the University of Missouri.

Mr. Truitt spent many years of his adult

life in business, holding various executive positions with Sears, Roebuck & Co. and later going to Washington to make a special study for the Temporary National Economic Committee of the purchasing methods used by federal agencies. This work was done in the Procurement Division of the U.S. Treasury.

In subsequent advancements, he was successively a special agent for the Department of Commerce, assistant chief and chief of the Marketing Laws Unit; national director of the Marketing Laws Survey, sponsored by the Department of Commerce; and chairman of the Interdepartmental Committee representing ten federal agencies concerned with the cause and effect of interstate trade barriers.

For eight years, he was president of the National Association of Margarine Manufacturers, during which time restrictive federal laws and taxes on margarine were relaxed and all but eight states have revised their margarine laws. Since then, margarine sales have increased greatly and farmers producing agricultural oils have enjoyed expanded markets for their products.

Mr. Truitt's work in the fertilizer industry has been with an eye to improved public relations. He has represented the industry in legislative matters, vigorously presenting the industry viewpoint in opposing measures incongruous with competitive enterprise, and being just as vigorous in backing programs that would increase the fertilizer market.

The aggressive program of the National Plant Food Institute should continue to develop as it has in years past. Progress made during the past several years has been outstanding by almost any standard, and as the fertilizer industry faces the challenges of a new decade, it can continue to look to the NPFI for forthright leadership.

Chemicals Defended

LIKE A BREATH of fresh air in a hot and smoke-filled room was the recent speech of Hon. Henry A. Dixon of Utah in the House of Representatives. Mr. Dixon made an eloquent and sensible plea for a realistic policy concerning the use of chemicals in agriculture, in sharp contrast to the critical, emotional and ill-founded tirades heard too often these days against pesticides of all kinds.

Mr. Dixon attacked the Delaney amendment specifically, stating that it is "too sweeping." The measure was passed when it was presented during the closing rush of the last Congress. "There was little opportunity for debate," Mr. Dixon explained, "and on the floor, House members were made to feel that they would be voting for cancer if they opposed the Delaney amendment. So it passed in a breeze, as it also did in the Senate."

The provisions of this measure, which becomes effective March 6, have aroused the ire of many farm groups as well as the agricultural chemical trade. The growers need these materials. "They want to use these needed chemicals and protect public health through designation of safe, low tolerances of chemicals established by the National Academy of Science, or a commission of scientists," Mr. Dixon declared. "In this effort they have the full cooperation of Secretary Benson. They fear that the present interpretation of the Delaney amendment could virtually wreck U.S. agriculture as well as worsen rather than improve public health."

Here are some of their arguments:

1. Numerous common foods have been named as carcinogens, yet people eat them in quantity. This was brought out in a 1957 statement by George P. Larrick, commissioner of the Food and Drug Administration:

"Some have suggested that an additive should not be allowed in food if it produces any cancer in any test animal by any route of administration. Before concluding that this would be wise, we should consider its implications. Cancers can be produced in test animals by repeated injections of sugar solutions in the muscle tissue or peanut oil or cotton seed oil or lard or tannic acid. Possibly repeated injections of some other common food chemicals will produce cancer."

Is the government then straining at the ridiculous to prohibit infinitesimal traces of many additives without any evidence of their danger to humans, when we eat in quantity other items which produce the same results?

2. Chemical companies are left in a quandary. The most minute measurement of a product may reveal no residue by measuring to 10 parts per billion, for example. Next year, however, new scientific methods may prove that by measuring to one part per billion a chemical trace is proven, thereby prohibiting the chemical.

3. So much publicity has been given to the cancer scare that even routine Food and Drug actions are now causing financial losses to farmers, merchants, and companies. For example, one carton of Florida celery was found to be contaminated and was properly confiscated. However, although no further contamination was found, the Florida celery price dropped more than 50%.

MEETING MEMOS



March 16—Soils Seminar, Soils Building, University of Minnesota, St. Paul, Minn.; University of Minnesota and Minnesota Fertilizer Industry Assn. cooperating.

Meeting Memos listed above are being listed in this department this week for the first time.

March 2-6—Annual Southern Safety Conference, Robert Meyer Hotel and George Washington Hotel, Jacksonville, Fla.

March 22-23—Western Agricultural Chemicals Assn., spring meeting, Miramar Hotel, Santa Barbara, Cal.

March 23-25—North Central Branch, Entomological Society of America, Schroeder Hotel, Milwaukee, Wis.

March 30-31—Twenty-fourth annual meeting, Georgia Entomological Society, New Science Center, University of Georgia, Athens, Ga.

April 11-12—Eight annual California Fertilizer Assn. Conference, sponsored by CFA Soil Improvement Committee, Fresno State College, Fresno, Cal.

June 12-15—National Plant Food Institute annual meeting, Greenbrier Hotel, White Sulphur Springs, W. Va.

June 21-22—Eighteenth Annual Convention, Association of Southern Feed & Fertilizer Control Officials, Riverside Hotel, Gatlinburg, Tenn. For further information, write Maurice B. Rowe, secretary-treasurer, Department of Agriculture, 1119 State Office Building, Richmond 19, Va.

June 27-29—Pacific Branch, Entomological Society of America, Davenport Hotel, Spokane, Wash.

July 13-15—Eleventh Annual Fertilizer Conference of the Pacific

Northwest, Hotel Utah, Salt Lake City; B. R. Bertramson, State College of Washington, Pullman, Wash., chairman.

July 27-29—Great Plains Agricultural Council, 1960 meeting, Laramie, Wyo.

July 27-30—Southwest Fertilizer Conference and Grade Hearing, Galvez Hotel, Galveston, Texas.

Aug. 15-23—Seventh International Soil Science Congress, University of Wisconsin, Madison, Wis., Prof. Emil Truog, Congress Manager, Soils Building, College of Agriculture, Madison 6, Wis.

Aug. 25-27—Mississippi Soil Fertility and Plant Food Council, 1960 meeting, Buena Vista Hotel, Biloxi, Miss.

Sept. 20-30—Northeast Fertilizer Conference, Hotel Hershey, Hershey, Pa.

Oct. 5-8—Southeast Fertilizer Conference, Atlanta Biltmore Hotel, Atlanta, Ga.

Oct. 17-21—45th annual National Safety Congress, Fertilizer Section, LaSalle Hotel, Chicago.

Nov. 13-15—California Fertilizer Assn., 37th annual meeting, del Coronado Hotel, Coronado, Cal.

Wisconsin Authorizes Port Inspection Service

MADISON, WIS.—The Wisconsin Department of Agriculture has taken action to guard against pests that may be hitch-hiking into Wisconsin aboard the ships calling at Wisconsin Great Lakes harbors.

The department has authorized a special Wisconsin lake port inspection service, officials announced recently.

The objective is to guard Wisconsin agriculture and other interests from insects, and possibly disease, that might otherwise gain entry into the state.

Donald N. McDowell, director of the department, names the Khapra beetle, of Asiatic origin, as one of the threats.

Wisconsin thus far has managed to fight off the Japanese beetle, another dangerous foreign invader, but it may reach the state by way of ocean-going steamships unless precautions are taken against entry, Mr. McDowell said.

Reader Views

To the Editor:

Please accept my sincere thanks and appreciation for the very fine article entitled "Fertilizer Industry Speaks Up Versus Tax-Exempt Competition" on page 32 of your Feb. 15 issue. This article is extremely timely and gives tangible evidence of the extreme discrepancy which exists in our tax structure today.

The cooperatives are given preferred treatment in that: (1) They pay little or no federal income tax, (2) they are able to obtain finances at extremely low interest rates of two and three per cent from the Bank of Cooperatives, and (3) they obtain materials produced at government owned and operated plants at lower prices than private businesses can obtain them. These and other advantages mean that the coops are running out of business smaller independently operated businesses.

We wonder if we pursue this trend to its ultimate conclusion to the point that all businesses turn themselves into a coop, just who would pay the cost of running the government? Certainly, there is little incentive now for private business not to turn itself into a coop.

Again, let me say thanks to you for your article, and we trust that you will see fit to publish additional similar articles which will point out the glaring inequities in "Fertilizer Industry Speaks up Versus Tax-Exempt Competition."—Jack C. Smith, C. O. Smith Guano Co., Moultrie, Ga.

Georgia Dealers

Sponsor Short Course

VALDOSTA, GA. — Approximately 25% of the farms in Lowndes County were represented at a short course held recently in Valdosta sponsored by several fertilizer concerns, including Georgia Fertilizer Co., A. J. Strickland Co., Farmers Mutual Exchange, all of Valdosta, and C. O. Smith of Hahira.

P. J. Bergeaux, extension agronomist, the first speaker, urged farmers to have their soil tested as a means of getting accurate recommendations for their fertilizer use. He called attention to a four-point program in which he called for soil tests, liming according to the soil needs as re-

Classified Ads

Classified advertisements accepted until Tuesday each week for the issue of the following Monday.

Rates: 15¢ per word; minimum charge \$2.25. Situations wanted, 10¢ a word; \$1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Commercial advertising not accepted in classified advertising department. Display advertising accepted for insertion at minimum rate of \$11 per column inch. All Want Ads cash with order.

BUSINESS OPPORTUNITIES

DISTRIBUTORSHIPS AVAILABLE FOR Best 4 brand agricultural chemicals and herbicides. Prices, quality and controlled distribution can be yours. Time Chemical Corp., 5321 Dahlia Street, Denver 16, Colo.

DISTRIBUTORS—SOME DESIRABLE TERRITORIES now open for highly-profitable Arrow Brand finely-ground rock phosphate—the leader in its field. You will be backed by advertising and complete sales and promotion program. Write Dept. C. Robin Jones Phosphate Company (Est. 1902), Nashville, Tennessee.

SITUATIONS WANTED

NEED ALL-AROUND KNOW-HOW?

Nearly twenty years' solid experience in agriculture, thirteen in agricultural chemicals, balance in seed industry and state experiment station. Positions have included those of Development Manager, Sales Manager, Product Manager (present) and Vice President - Sales. Seeking a challenging marketing position preferably with a smaller but aggressive organization. Married; 41 years old; two children; B.S. Entomology, University of Connecticut; M.S. Plant Pathology, Virginia Polytechnic Institute; American Management Association marketing courses. Reply Ad No. 5461, Croplife, Minneapolis 40, Minn.

vealed by the test, and use of mixed fertilizer and nitrogen.

Mr. Bergeaux showed charts to emphasize the fact that more fertilizer used brings more profits. He stated that in many cases the wrong kind of fertilizer is being used in Lowndes County. He said 85% of the farms were using 4-12-12, when only 25% actually needed this analysis. In contrast, 5-10-15 was the most badly needed for the type of soil found in the county, but only 13% were using this type.

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A Complete Sales Medium...

CROPLIFE is the only *complete sales medium* directed to the agricultural chemical industry. It is a newspaper appealing to all segments of the industry. One of its editorial functions is to knit more closely together all those industry elements—manufacturers, agents, retailers, the educational echelon and farm advisor groups. It does this by:

- Keeping all segments informed of all industry news.
- Providing feature material designed to help manufacturers and mixers to do a better job, to help dealers sell and to help farm advisors and educational people make sound recommendations.
- Keeping all industry alert to current and proposed government action.
- Providing a channel through which news and advertising can reach all segments of the industry.

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